

INSTALLATION INSTRUCTIONS FOR SENSOR ACTIVATED ETF-600/610 LAVATORY FAUCETS

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Model ETF-600
24 VAC, Sensor Activated, 4" Centerset
Lavatory Faucet

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Model ETF-610
24 VAC, Sensor Activated
Pedestal Lavatory Faucet



LIMITED WARRANTY

Sloan Valve Company warrants its ETF-600 and ETF-610 Faucets to be made of first class materials, free from defects of material or workmanship under normal use and to perform the service for which they are intended in a thoroughly reliable and efficient manner when properly installed and serviced, for a period of three (3) years (one (1) year for special finishes) from date of purchase. During this period, Sloan Valve Company will, at its option, repair or replace any part or parts which prove to be thus defective if returned to Sloan Valve Company, at customer's cost, and this shall be the sole remedy available under this warranty. No claims will be allowed for labor, transportation or other incidental costs. This warranty extends only to persons or organizations who purchase Sloan Valve Company's products directly from Sloan Valve Company for purpose of resale.

THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF. IN NO EVENT IS SLOAN VALVE COMPANY RESPONSIBLE FOR ANY CONSEQUENTIAL DAMAGES OF ANY MEASURE WHATSOEVER.

PRIOR TO INSTALLATION

Prior to installing the Sloan ETF-600 or ETF-610 Faucet, install the items listed below. Refer to Rough-in illustrations on Page 2.

- **When Using Plug-In Transformer** — Install electrical receptacle for plug-in transformer (120 VAC, 2 amp service for each ETF-233 (24 VAC, 35 VA) plug-in transformer used).
- **When Using Box Mount Transformer** — Install electrical wiring to transformer location (120 VAC, 2 amp service for each EL-248-40 (24 VAC, 40 VA) transformer used).
- Lavatory/sink
- Drain line
- Hot and cold water supply lines or tempered water supply line

Multiple Faucets

Multiple faucets can be powered by a single transformer, provided that the transformer has been properly sized. Allow a minimum of 15 VA of current rating for each solenoid valve used. Refer to "Step 4 — Install Transformer" for further information.

Mixing Valve

When installing the faucet with a Sloan mixing valve, these Installation Instructions AND the Installation Instructions packaged with the mixing valve MUST be followed.

Important:

- **INSTALL ALL ELECTRICAL WIRING IN ACCORDANCE WITH NATIONAL/LOCAL CODES AND REGULATIONS.**
- **INSTALL ALL PLUMBING IN ACCORDANCE WITH APPLICABLE CODES AND REGULATIONS.**
- **A 24 VAC STEP-DOWN TRANSFORMER MUST BE USED.**
- **USE APPROPRIATE PRECAUTIONS WHILE CONNECTING TRANSFORMER TO 120 VAC POWER SOURCE.**
- **DO NOT PLUG TRANSFORMER INTO POWER SOURCE (RECEPTACLE) UNTIL ALL WIRING IS COMPLETED. ALLOWING 24 VAC TRANSFORMER WIRES TO TOUCH OR SHORT WHILE POWER IS BEING SUPPLIED WILL CAUSE PERMANENT DAMAGE TO THE TRANSFORMER AND CIRCUIT CONTROL MODULE.**
- **KEEP THREAD SEALANT OUT OF YOUR WATERWAY TO PREVENT COMPONENT PART DAMAGE! DO NOT USE ANY SEALANT ON COMPRESSION FITTINGS. FOR THREADED PIPE FITTINGS, DO NOT APPLY SEALANT TO THE FIRST TWO "STARTER" THREADS.**
- **FLUSH ALL WATER LINES UNTIL WATER IS CLEAR BEFORE CONNECTING SOLENOID TO SUPPLY STOPS.**

DO NOT INSTALL THE SPRAY HEAD UNTIL AFTER THE SUPPLY LINES HAVE BEEN FLUSHED.

BAK-CHEK® TEE USAGE

When connecting the Sloan ETF-600 or ETF-610 Faucet to both hot and cold water supplies, a Bak-Chek® Tee is provided and required as illustrated in the Rough-in drawings on Page 2. Water temperature can be controlled by adjusting the supply stops.

When connecting the faucet to a single line water supply or a pre-tempered water supply, a Bak-Chek® Tee is not required.

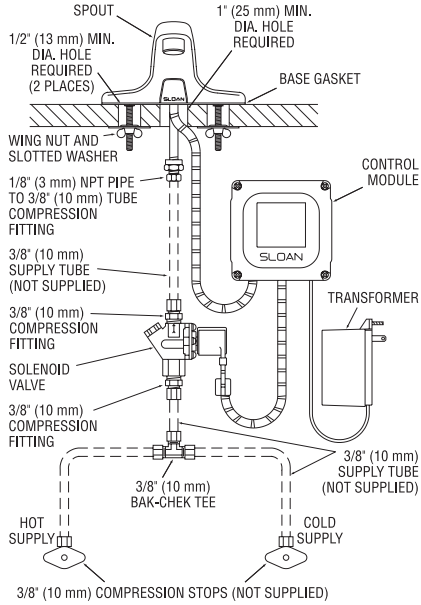
A Bak-Chek® Tee is not required or provided when a Temperature Mixing Valve is included with the faucet.

TOOLS REQUIRED FOR INSTALLATION

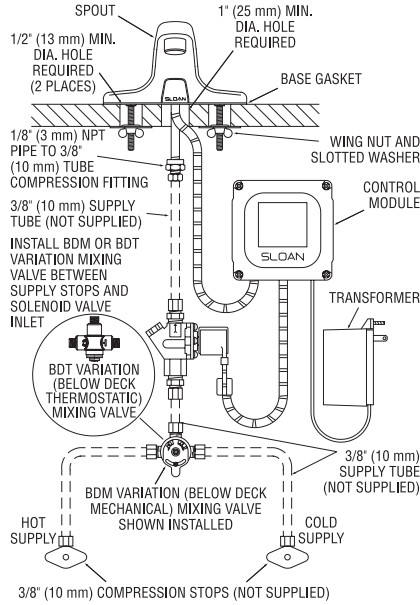
- Open end wrenches for hex sizes: 1", 5/8", 9/16", 1/2"
- Basin wrench
- Pliers
- Slotted screwdriver, 3/16"
- Slotted screwdriver (supplied)
- Wire stripper/crimping tool
- Phillips head screwdriver, #2

FAUCET ROUGH-IN

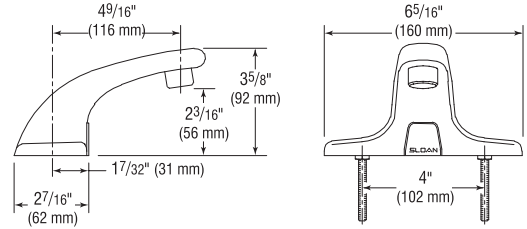
ETF-600 Faucet with Bak-Chek® Tee for Hot and Cold Water Supply ‡



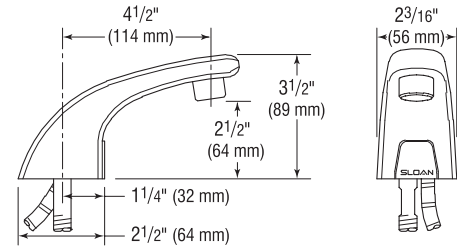
ETF-600 Faucet with BDM and BDT Variation Mixing Valves for Hot and Cold Water Supply ‡



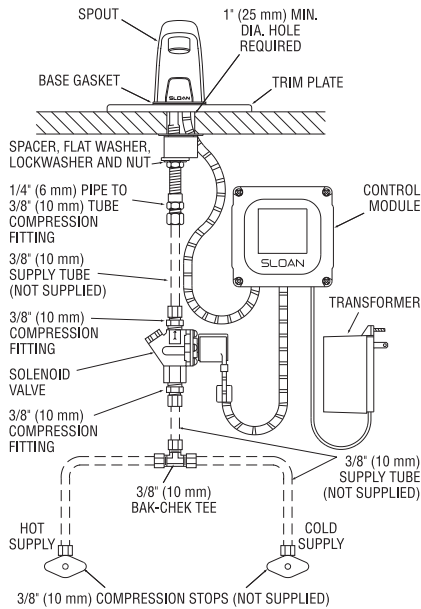
ETF-600 Faucet



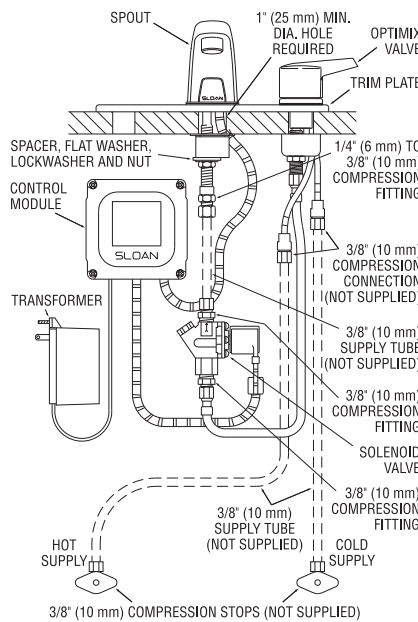
ETF-610 Faucet



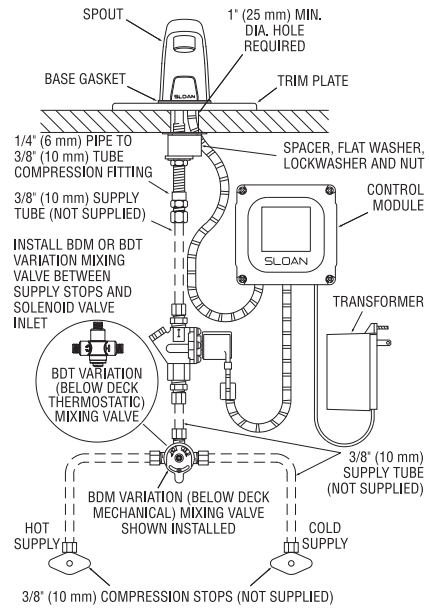
ETF-610 Faucet with Bak-Chek® Tee for Hot and Cold Water Supply (shown with 4" trim plate) ‡



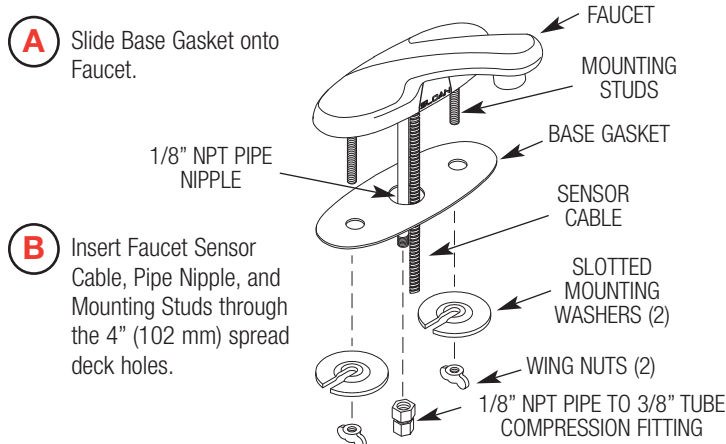
ETF-610 Faucet with ADM Variation Mixing Valve for Hot & Cold Water Supply (shown with 8" trim plate) ‡



ETF-610 Faucet with BDM and BDT Variation Mixing Valves for Hot and Cold Water Supply (shown with 4" trim plate) ‡



1A - INSTALL ETF-600 FAUCET



- A** Slide Base Gasket onto Faucet.
- B** Insert Faucet Sensor Cable, Pipe Nipple, and Mounting Studs through the 4" (102 mm) spread deck holes.
- C** Secure Faucet to deck using Slotted Mounting Washers and Wing Nuts supplied.
- D** Apply thread sealant or Teflon tape to threads at end of Faucet Pipe Nipple. Install 1/8" Pipe x 3/8" Tube Compression Fitting on end of Faucet Pipe Nipple.

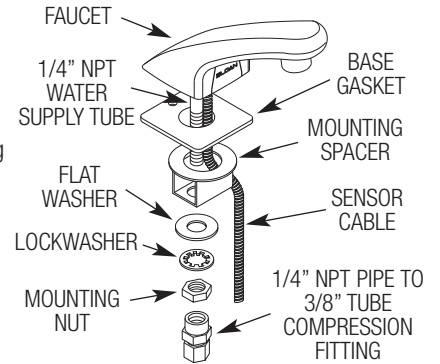
Note: Refer to the Installation Instructions included with the ETF-578-A Trim Plate for additional information about using an 8" Trim Plate with an ETF-600 faucet.

1B - INSTALL ETF-610 FAUCET

Note: Sloan Valve Company recommends that this faucet be installed with our trim plate. Our trim plate includes an anti-rotation feature to prevent rotary motion of this single-hole pedestal-style faucet.

- A** Slide Base Gasket over Faucet Water Supply Tube and Sensor Cable. Install optional Trim Plate, then Trim Plate Gasket.
- B** Holding Faucet Base Gasket and optional Trim Plate assembly in place, insert Sensor Cable and Faucet Water Supply Tube through the 1" (25 mm) center hole in deck or lavatory. Use plumber's putty to secure optional Trim Plate.

- C** Thread Sensor Cable through side of Mounting Spacer. Secure Faucet to deck or lavatory using Flat Washer, Lockwasher and Mounting Nut.
- D** Apply thread sealant or Teflon tape to threads at end of Faucet Water Supply Tube. Install 1/4" Pipe x 3/8" Tube Compression Fitting on end of Faucet Water Supply Tube.

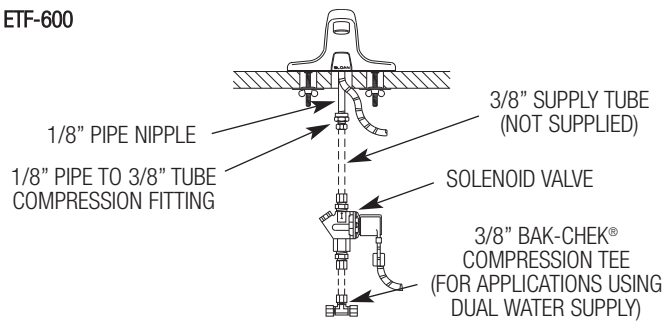


2 - INSTALL SOLENOID VALVE

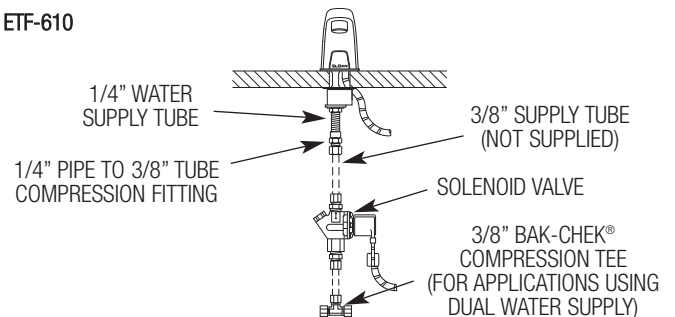
Note: Flow direction of Solenoid Valve is indicated by arrow on Valve Body.

- A** Connect 3/8" O.D. Supply Tube between Compression Fitting on outlet side of Solenoid Valve and Compression Fitting on Spout's Pipe Nipple or Water Supply Tube.

ETF-600



ETF-610

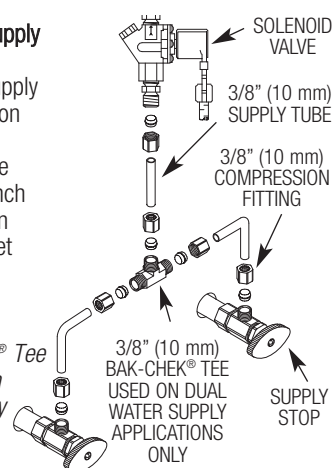


3 - CONNECT SUPPLY LINE(S)

- A** For Dual Line Hot and Cold Water Supply Applications

Install a 3/8 inch (10 mm) copper supply tube between Bak-Chek® Compression Tee and hot and cold supply stops. (Supply stops and copper supply tube furnished by installer.) Install a 3/8 inch (10 mm) copper supply tube between Bak-Chek® Compression Tee and inlet side of Solenoid Valve. Tighten Compression Fittings securely.

Note: Failure to install the Bak-Chek® Tee can result in a cross flow connection when the faucet is off and the supply stops are open. If pressure of the hot and cold water supply differ, hot water can migrate into the cold water supply or vice-versa. Most plumbing codes require that the Bak-Chek® be used to prevent this.

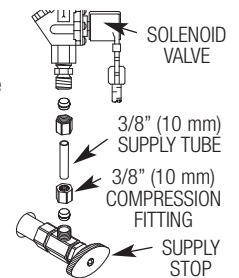


- B** For Single Line Water Supply Applications

Install a 3/8 inch (10 mm) copper supply tube between the supply stop and inlet side of Solenoid Valve. (Supply stop and copper supply tube furnished by installer.) Tighten Compression Fittings securely.

Important: Flush dirt, debris, and sediment from the supply line(s).

Important: Keep thread sealant out of your waterway and prevent component part damage! Do not use sealant on compression fittings. When thread sealant is used, do not apply it to the first two "starter" threads.



4 - INSTALL TRANSFORMER

Multiple Faucets

Multiple faucets can be powered by a single transformer that has been properly sized. Allow a minimum of 15 VA of current rating for each solenoid valve used. Refer to the following example to determine the required current rating for 3 OPTIMA faucets.

Example:

Total number of OPTIMA faucets:	3
Total number of solenoid valves:	3
Multiply by current rating:	15 VA

Minimum current rating of required transformer: 45 VA

Transformers Available with the ETF-600 and ETF-610 Faucets

Standard Plug-In †	ETF-233	120 VAC	35 VA
Standard Box Mount	EL-248-40	120 VAC	40 VA

† In Canada, use ETF-416 (120 VAC, 35 VA).

Optional Transformers Available from Sloan

Box Mount	EL-154	120 VAC	50 VA
Foot Mount	EL-208	120 VAC	100 VA
Box Mount	EL-342	240 VAC	50 VA

All Sloan transformers are 50/60 Hz.

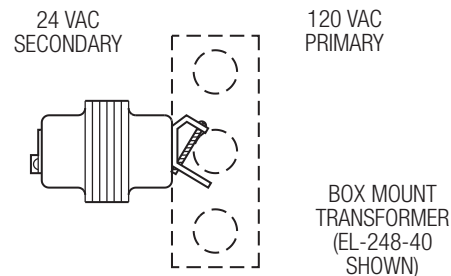
Other transformers (not supplied by Sloan) may be used, provided they meet UL requirements for Class 2 transformers.

4A - INSTALL BOX MOUNT TRANSFORMER

Important: DO NOT supply power to primary side of Transformer until all wiring has been completed.

Mount Transformer on a metal electrical junction box (supplied by others). ("J" box should be mounted inside chase wall or above ceiling.) Install Transformer within 50 feet (15.24 meters) of Faucet. 18 gauge wire is recommended.

- A** Run wires from secondary side of Transformer to 3/8 inch (10 mm) hole at back of Control Module Enclosure. If necessary, wires can be run through wall and then inserted through hole in back of Control Module Enclosure.



4B - INSTALL PLUG-IN TRANSFORMER

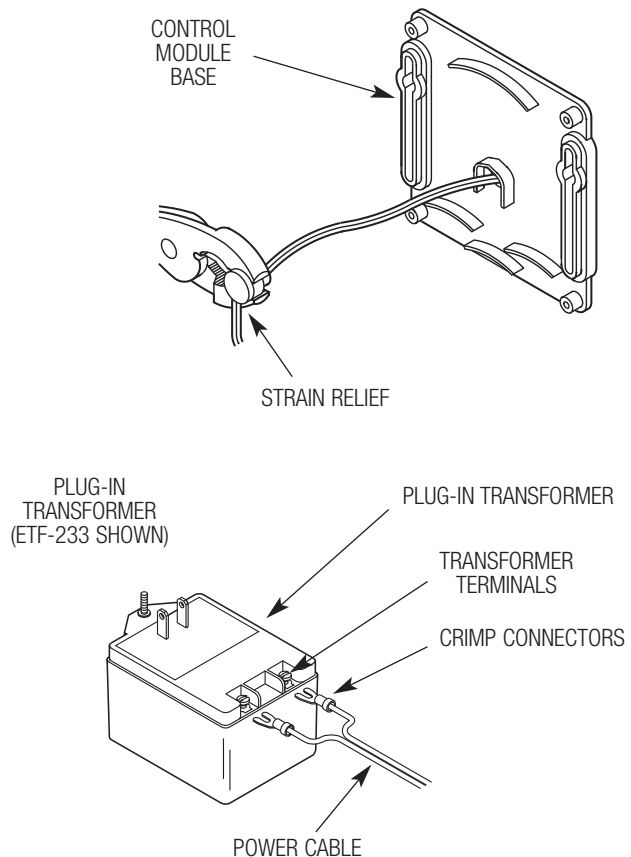
Important: DO NOT plug Transformer into receptacle until all wiring has been completed.

The Transformer is supplied with a 10 foot Cable; however, this Cable can and should be shortened to meet installation requirements.

- A** Strip ends of Transformer Power Cable approximately 3/16 to 1/4 inch (5 to 6 mm).
- B** Install Strain Relief 3 inches (76 mm) from one end of Power Cable.
- C** Insert Power Cable and Strain Relief into hole at back of Control Module. Install right angle Strain Relief so that Power Cable enters the Control Module from the bottom.

Important: Twist stranded ends of Power Cable before inserting into Terminal Block. Fraying of Stranded Power Cable Wire can cause a short and damage the Control Module and Transformer when powered.

- D** Connect Power Cable to Terminal Block on Connector Board. See Step 6.
- E** Install Crimp Connectors and connect Power Cable ends to Transformer Terminals.

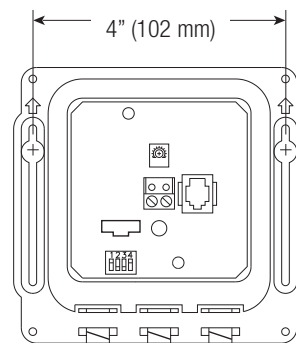


5 - MOUNT CONTROL MODULE TO WALL

- A** Install the Control Module in an appropriate location as shown in Rough-in. Control Module must be installed so that all cables enter from the bottom of the unit. When installed, Cables from the Spout and Solenoid Valve to the Control Module should have some slack.
- B** Mount Control Module to wall using Mounting Screws and Plastic Anchors.

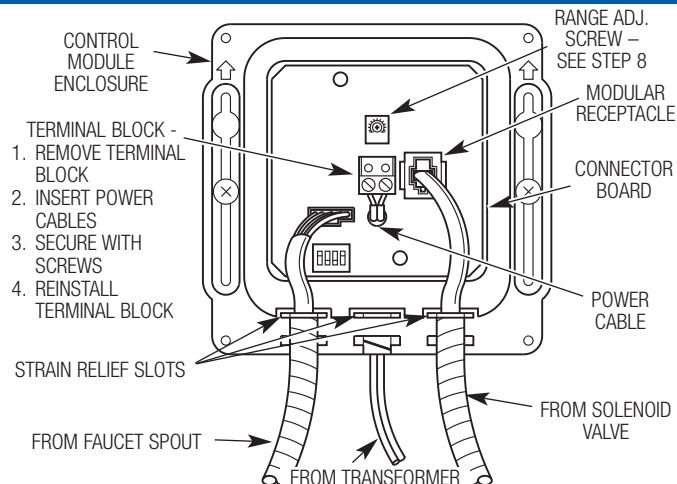
EXTENSION CABLES

Extension Cables are available as an option from Sloan to allow for installing the Control Module remote from the Faucet Spout and Solenoid Valve. Refer to the Parts List for available lengths.



6 - CONNECT CONTROL MODULE CONNECTIONS

- A** Route Cables from Solenoid Valve and Spout to the Control Module.
- B** Insert Solenoid Valve Connector into the Modular Receptacle on Connector Board.
- C** Insert Locking Connector from Faucet Spout into mating Receptacle on Connector Board. Allow 3 to 4 inches (76 to 102 mm) of Cable to extend into the Control Module.
- D** Insert each Conduit Cable into a strain relief slot in the Control Module.

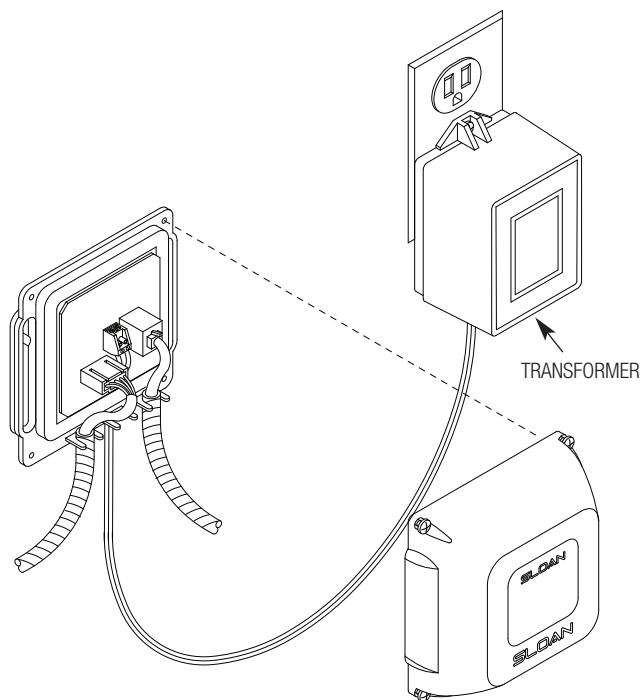


7 - PLUG IN TRANSFORMER AND START-UP

- A** Plug Transformer into 120 VAC Receptacle.

Note: The Control Module is equipped with two LED lights. When power is supplied by the Transformer, one LED will illuminate green. When Sensor is activated, this LED will change to red. A second red LED illuminates when Solenoid Valve is activated.

- B** Open Supply Stop(s). With Aerator removed, activate Faucet for 30 seconds by placing hands in front of Sensor. The Solenoid Valve should "click" and water should flow from the Spout. If this does not occur, refer to the Troubleshooting section of this instruction instructions.
- C** Close Supply Stop(s) and install Spray Head in Spout using the Key provided. Reopen Supply Stop(s), activate Faucet and check for leaks.



8 - RANGE ADJUSTMENT

The OPTIMA ETF-600 and ETF-610 Faucets are factory set to operate when hands are placed 4 to 5 inches (102 to 127 mm) from Sensor. This range should be satisfactory for most installations.

If range adjustment is required, refer to the following range adjustment procedures.

TO MAKE A RANGE ADJUSTMENT

The Range Potentiometer and Dip Switches are located in Control Module.

Important: Range Potentiometer adjustment screw rotates only 3/4 of a turn; DO NOT over-rotate.

Make certain that Dip Switch number 4 is in the UP position. Using the small screwdriver provided, adjust Range Potentiometer clockwise until green (power ON) indicator LED turns red (Faucet is now picking up sink). Adjust Range Potentiometer back counterclockwise until red LED returns to green. Range is now at maximum.

Cycle Faucet several times to assure that range as adjusted will not inadvertently pick up IR reflection in lavatory. If IR reflection occurs (green LED will flicker red), adjust Range Potentiometer counterclockwise very slightly and again cycle Faucet.

Repeat range adjustment counterclockwise until length of range is at bowl rim of lavatory (plus or minus 1" (25 mm)).

Time Out Adjustment

The Faucet Time Out Setting determines the maximum time the Faucet will run upon continuous activation. This timing can be changed to meet individual application requirements.

Refer to Table 1 or label on cover of Control Module along with the following instructions to set the desired Time Out. The Dip Switches used to set the Time Out are located in the Control Module.

Set the Time Out by configuring the number 1, 2 and 3 Dip Switches as shown in Table 1.

Table 1 — Time Out Settings

Time Out	Dip Switch Setting		
	Switch #1	Switch #2	Switch #3
3 SECONDS	UP	UP	DOWN
6 SECONDS	DOWN	DOWN	UP
12 SECONDS	UP	DOWN	UP
30 SECONDS	UP	DOWN	DOWN
45 SECONDS	UP	UP	UP
1 MINUTE	DOWN	UP	UP
3 MINUTES	DOWN	DOWN	DOWN
20 MINUTES	DOWN	UP	DOWN

Unless otherwise specified, all ETF-600/ETF-610 Faucets leave the factory set with a 30 second Time Out.

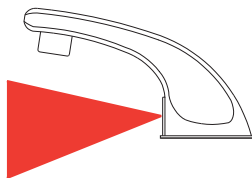
Note: The position of Dip Switch # 4 (range enhancer setting) does not affect Faucet Time Outs.

Push Cables into slots at the bottom of the Control Module.

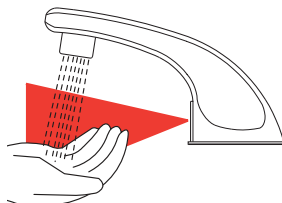
Install Control Module Cover using Screws provided. Refer to illustration in Step 6.

TEST FAUCET OPERATION

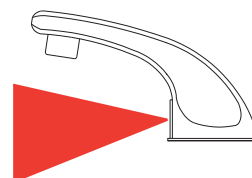
1. A continuous invisible beam of infrared light is emitted from the OPTIMA sensor located at the base of the lavatory faucet.



2. As the user's hands enter the beam's effective range (beneath the spray head), the beam is reflected back into the sensor receiver and activates the solenoid valve. Tempered water flows from the faucet into the sink until the hands are removed from the beam or until the faucet reaches an automatic time out limit setting.



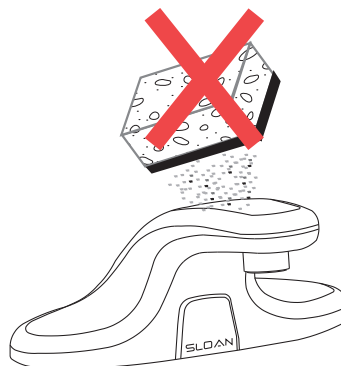
3. When hands are moved away from the sensor, the loss of reflected light initiates an electrical signal that deactivates the solenoid valve, shutting off the water flow. The circuit then automatically resets and is ready for the next user.



CARE AND CLEANING OF CHROME AND SPECIAL FINISHES

DO NOT use abrasive or chemical cleaners (including chlorine bleach) to clean faucets that may dull the luster and attack the chrome or special decorative finishes. Use ONLY soap and water, then wipe dry with clean cloth or towel.

When cleaning the bathroom tile, protect the faucet from any splattering of cleaner. Acids and cleaning fluids will discolor or remove chrome plating.



TROUBLESHOOTING GUIDE

Note: Remove Cover from Control Module to check diagnostic lights.

1. PROBLEM: No water is delivered when Faucet is activated.

INDICATOR: If no LED lights illuminate:

CAUSE: No electricity is being supplied to Faucet.

SOLUTION: Ensure that the main power is turned "ON." Check all Transformer, Sensor, Solenoid and Cable Connections. Make sure that Transformer is supplying 24 VAC (Volts AC). If no voltage is detected, replace Transformer.

CAUSE: There is an electrical system malfunction.

SOLUTION: Reset electrical system. Unplug Sensor Connection. Disconnect power to circuit for ten (10) seconds. Reconnect.

INDICATOR: If the GREEN LED does NOT illuminate when power is reconnected:

CAUSE: There is an electrical system malfunction.

SOLUTION: Reset electrical system. Unplug Sensor Connection. Disconnect power to circuit for ten (10) seconds. Reconnect.

CAUSE: The Control Module circuit is "dead."

SOLUTION: Replace ETF-450-A Control Module.

INDICATOR: If GREEN LED illuminates AND changes to RED when hands are in the Sensor's detection zone AND the RED Solenoid LED illuminates:

CAUSE: Water supply stop(s) may be partially closed.

SOLUTION: Open supply stop(s) completely.

CAUSE: Debris is clogging Solenoid Filter.

SOLUTION: Shut off water supply. Remove, clean and reinstall Solenoid Filter.

INDICATOR: If GREEN LED illuminates AND changes to RED when hands are placed in the Sensor's detection zone AND the RED Solenoid LED flickers with a vibrating/clicking noise heard inside the module:

CAUSE: There is a direct short in the Solenoid or Solenoid Cable.

SOLUTION: Replace with ETF-370-A Solenoid.

INDICATOR: If GREEN/RED LED illuminates AND changes to RED when hands are NOT located in the Sensor's detection zone BUT the RED Solenoid LED (in upper left corner of circuit) does NOT illuminate:

CAUSE: Sensor range is set too long and is detecting the sink.

SOLUTION: Reduce Sensor detection range.

CAUSE: Sensor is faulty.

SOLUTION: Replace Sensor.

INDICATOR: If GREEN LED illuminates BUT does NOT change to RED when hands are placed in the Sensor's detection zone:

CAUSE: Sensor range is set too short.

SOLUTION: Increase Sensor detection range.

CAUSE: Sensor is faulty.

SOLUTION: Replace Sensor.

2. PROBLEM: Sensing Range is too short.

CAUSE: Extended Range Sensitivity is required.

SOLUTION: Dip Switch number 4 should be in the "DOWN" (Extended Range Sensitivity) position. Increase range by adjusting Range Potentiometer clockwise (yellow phillips screw in blue base).

3. PROBLEM: Faucet activates by itself (false triggers).

CAUSE: Sensor range is set too long.

SOLUTION: Decrease range by adjusting Range Potentiometer counterclockwise. If necessary, flip Dip Switch number 4 to the "UP" (Reduced Range Sensitivity) position. Check surroundings for factors that contribute to Sensor range detection problems (bright lights, highly reflective surfaces, sunlight, etc.).

4. PROBLEM: Faucet delivers very low flow or just a dribble.

CAUSE: Water supply stop(s) may be partially closed.

SOLUTION: Open supply stop(s) completely.

CAUSE: Debris is clogging Solenoid Filter.

SOLUTION: Shut off water. Remove, clean, and reinstall Solenoid Filter or install Solenoid Valve repair kit ETF-1009-A.

CAUSE: Solenoid is worn or faulty.

SOLUTION: Rebuild with ETF-1009-A Solenoid Repair Kit or replace ETF-370-A Solenoid.

CAUSE: Debris is clogging Faucet Aerator or Spray Head.

SOLUTION: Shut off water. Remove Aerator or Spray Head (use Key if required). Clean and reinstall Aerator or Spray Head.

5. PROBLEM: Faucet does not stop delivering water or continues to drip after user is no longer detected (even after power to the Module has been disconnected).

CAUSE: Solenoid Valve is installed backward.

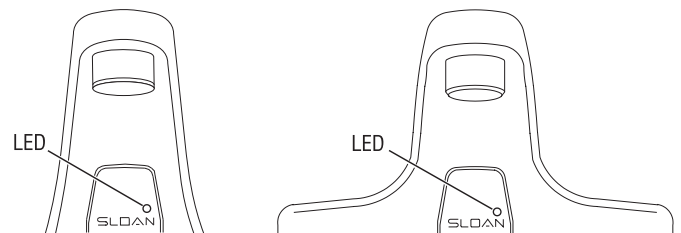
SOLUTION: Disconnect Solenoid. Reconnect Solenoid with water flow toward the Faucet (see arrow on Solenoid).

CAUSE: Debris is clogging Solenoid.

SOLUTION: Remove and clean Solenoid Operator. If necessary, rebuild with ETF-1009-A Repair Kit.

CAUSE: Seat in Solenoid Valve body is damaged or pitted.

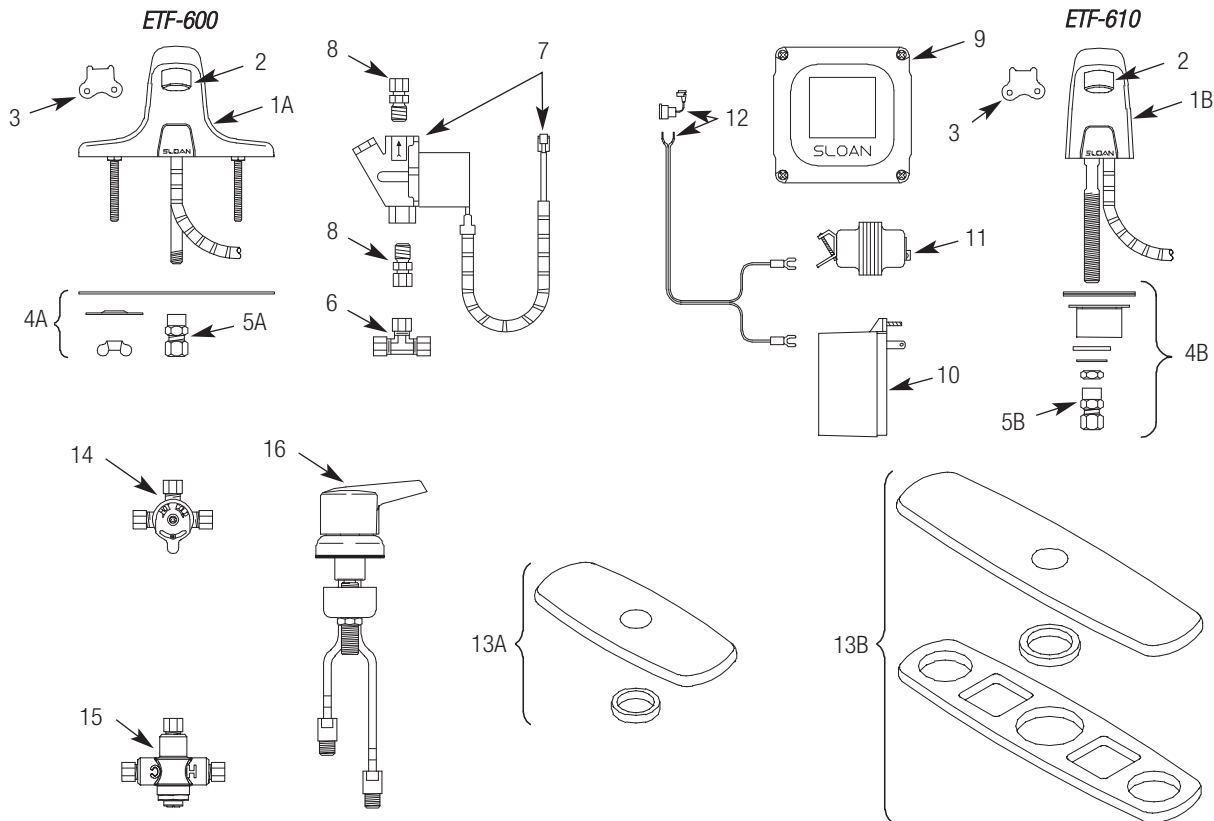
SOLUTION: Replace with ETF-370-A Solenoid.



When assistance is required, please contact Sloan Valve Company Installation Engineering Department at:

1-888-SLOAN-14 (1-888-756-2614)

PARTS LIST



Item No.	Part No.	Description
1A	ETF-543-A	Faucet Spout and Sensor Assembly (ETF-600)
1B	ETF-570-A	Pedestal Faucet Spout and Sensor Assembly (ETF-610)
2	ETF-1023-A	0.5 gpm (1.9 Lpm) Spray Head with Key (male thread)
	ETF-1024-A	2.2 gpm (8.3 Lpm) Aerator Spray Head with Key (male thread)
	ETF-1029-A	2.2 gpm (8.3 Lpm) Laminar Flow Spray Head (male thread)
3	ETF-435	Replacement Key Only for ETF-1023-A Spray Head and ETF-1024-A Aerator Spray Head
4A	ETF-546-A	Faucet Mounting Kit for ETF-600 includes: Base Gasket, two (2) Slotted Mounting Washers, two (2) Wing Nuts, and ETF-547 Compression Fitting Connector
4B	EBF-123-A	Faucet Mounting Kit for ETF-610 includes: Spacer, Base Gasket, 1/4" NPSM Hex Nut, Washer, 9/16" Lockwasher, Compression Fitting Connector
5A	ETF-547	1/8" NPT Pipe to 3/8" Tube Compression Fitting Connector (ETF-600)
5B	EBF-129	1/4" NPT Pipe to 3/8" Tube Compression Fitting Connector (ETF-610)
6	ETF-617-A	3/8" Bak-Chek® Tee Compression Fitting
7	ETF-370-A	24 VAC Solenoid Valve Assembly, includes Wire Harness
8	ETF-437-A	Assembly Kit, includes: Compression Fittings (2), Compression Nut (1), Compression Sleeve (1)
9	ETF-450-A	Control Module Assembly
10	ETF-233	Plug-In Transformer
11	EL-248-40	Box Mount Transformer
12	ETF-458-A	Power Cable with Strain Relief and Crimp Connectors (Transformer to Control Module)

OPTIONAL TRIM PLATES

13A	ETF-607-A	4" (102 mm) Centerset Single-hole Trim Plate Kit for ETF-610 Faucet
13B	ETF-608-A	8" (203 mm) Centerset Single-hole Trim Plate Kit for ETF-610 Faucet
—	MIX-102-A	4" (102 mm) Centerset Double-hole Trim Plate Kit for ETF-610 Faucet with Optional Mixing Valve
—	MIX-106-A	8" (203 mm) Centerset Double-hole Trim Plate Kit for ETF-610 Faucet with Optional Mixing Valve
—	ETF-578-A	8" (203 mm) Centerset Single-hole Trim Plate Kit for ETF-600 Faucet
—	ETF-577-A	8" (203 mm) Centerset Double-hole Trim Plate Kit for ETF-600 Faucet with Optional Mixing Valve

Item No.	Part No.	Description
14	MIX-60-A	Below Deck Mechanical Water Mixing Valve (BDM Variation)
15	MIX-135-A	Below Deck Thermostatic Water Mixing Valve (BDT Variation)
16	MIX-110-AA	Optimix® Deck Mounted Water Mixing Valve (ADM Variation) (only available for ETF-610 faucet)

FAUCET CABLE EXTENSION CORDS

Faucet to Control Module		Solenoid to Control Module	
ETF-1005-26	26" (0.7 meter) Length	ETF-1003-36	36" (0.9 meter) Length
ETF-1005-36	36" (0.9 meter) Length	ETF-1003-48	48" (1.2 meter) Length
ETF-1005-72	72" (1.8 meter) Length	ETF-1003-72	72" (1.8 meter) Length
ETF-1005-108	108" (2.7 meter) Length	ETF-1003-108	108" (2.7 meter) Length

SOLENOID VALVE REPAIR KIT

—	ETF-1009-A	Includes replacement Filter
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For additional information about Sloan Mixing Valves or Trim Plates, consult our Installation Instructions and Maintenance Guides.

If further assistance is required, please contact the Sloan Valve Company Installation Engineering Department at:

1-888-SLOAN-14 (1-888-756-2614)

The information contained in this document is subject to change without notice.

SLOAN®

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Rev. 2 (08/10)

INSTALLATION INSTRUCTIONS FOR BATTERY POWERED SENSOR ACTIVATED LAVATORY FAUCETS

Find at Air Delights!

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EBF-615

Pedestal,
Battery Powered,
Sensor Activated
Lavatory Faucet



Find at Air Delights!

Shop Now!

EBF-650

4" Centerset,
Battery Powered,
Sensor Activated
Lavatory Faucet



LIMITED WARRANTY

Sloan Valve Company warrants its EBF-615 and EBF-650 Faucets to be made of first class materials, free from defects of material or workmanship under normal use and to perform the service for which they are intended in a thoroughly reliable and efficient manner when properly installed and serviced, for a period of three years (1 year for special finishes) from date of purchase. During this period, Sloan Valve Company will, at its option, repair or replace any part or parts which prove to be thus defective if returned to Sloan Valve Company, at customer's cost, and this shall be the sole remedy available under this warranty. No claims will be allowed for labor, transportation or other incidental costs. This warranty extends only to persons or organizations who purchase Sloan Valve Company's products directly from Sloan Valve Company for purpose of resale. This warranty does not cover the life of the batteries.

THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF. IN NO EVENT IS SLOAN VALVE COMPANY RESPONSIBLE FOR ANY CONSEQUENTIAL DAMAGES OF ANY MEASURE WHATSOEVER.

Prior to installing the Sloan EBF-615 or EBF-650 faucet, install the items listed below. Also, refer to rough-in illustrations on Page 2.

- Lavatory/sink
- Drain line
- Hot and cold water supply lines or tempered water supply line

Mixing Valve

When installing the faucet with a Sloan Mixing Valve, these Installation Instructions AND the Installation Instructions packaged with the Mixing Valve **MUST** be followed.

Important:

- **ALL PLUMBING IS TO BE INSTALLED IN ACCORDANCE WITH APPLICABLE CODES AND REGULATIONS.**
- **KEEP THREAD SEALANT OUT OF YOUR WATERWAY TO PREVENT COMPONENT PART DAMAGE! DO NOT USE ANY SEALANT ON COMPRESSION FITTINGS. FOR THREADED PIPE FITTINGS, DO NOT APPLY SEALANT TO THE FIRST TWO "STARTER" THREADS.**
- **FLUSH ALL WATER LINES UNTIL WATER IS CLEAR BEFORE CONNECTING SOLENOID TO SUPPLY STOPS.**

DO NOT INSTALL THE BATTERIES UNTIL THE FAUCET IS COMPLETELY INSTALLED. If batteries are installed before sensor cable is connected to control module, the faucet will not properly set the sensing range for the sink on which it is installed.

TOOLS REQUIRED FOR INSTALLATION

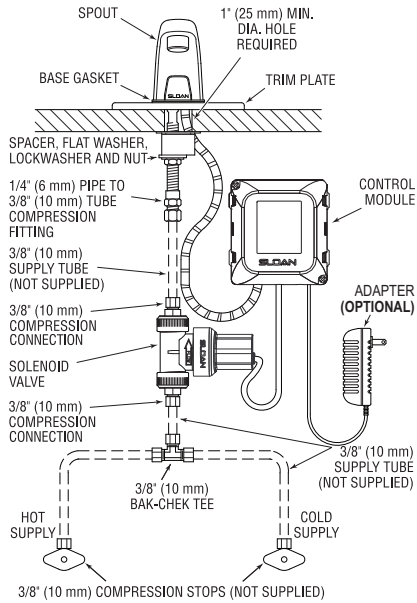
- Open end wrenches for the following hex sizes: 1/2", 9/16", 5/8", 11/16", 1"
- Basin wrench
- Phillips head screwdriver, #2
- Hammer (if installing plastic or hollow wall anchors to mount the control module)
- Pliers
- 1/4" drill bit (if installing plastic wall anchors to mount the control module)
- 5/16" drill bit (if installing hollow wall anchors to mount the control module)
- 3/8" drill bit (if installing toggle nut anchors to mount control module)

Bak-Chek[®] Tee Usage

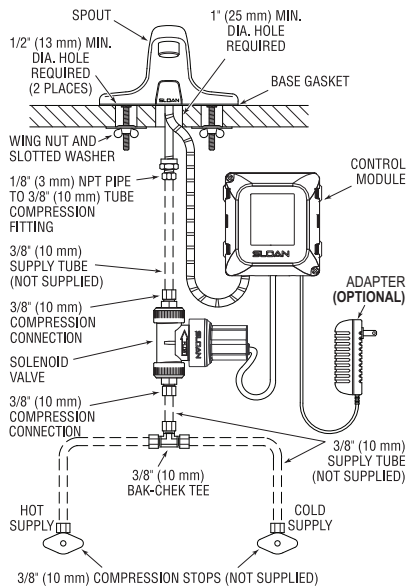
When connecting the EBF-615 or EBF-650 faucet to both hot and cold water supplies, a Bak-Chek[®] Tee is provided and required as illustrated in Step 3. Water temperature can be controlled by adjusting the supply stops. When connecting the faucet to a single line water supply or a pre-tempered water supply, a Bak-Chek[®] Tee is not required. A Bak-Chek[®] Tee is not required or provided when a Temperature Mixing Valve is included with the faucet.

FAUCET ROUGH-IN

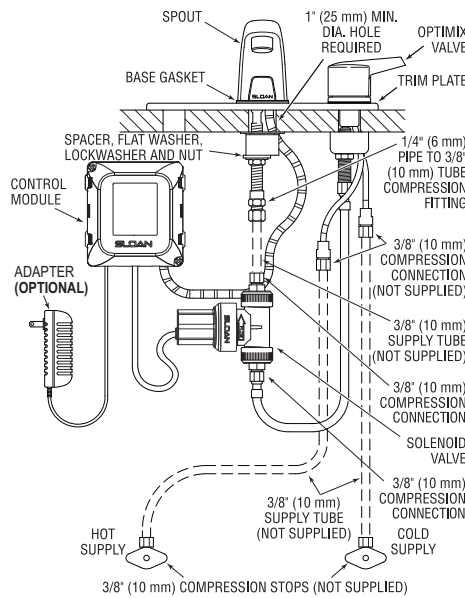
EBF-615 Faucet with Bak-Chek® Tee for Hot and Cold Water Supply (shown with 4" trim plate)



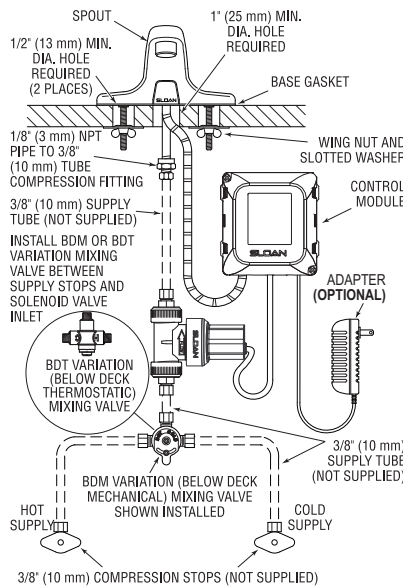
EBF-650 Faucet with Bak-Chek® Tee for Hot and Cold Water Supply



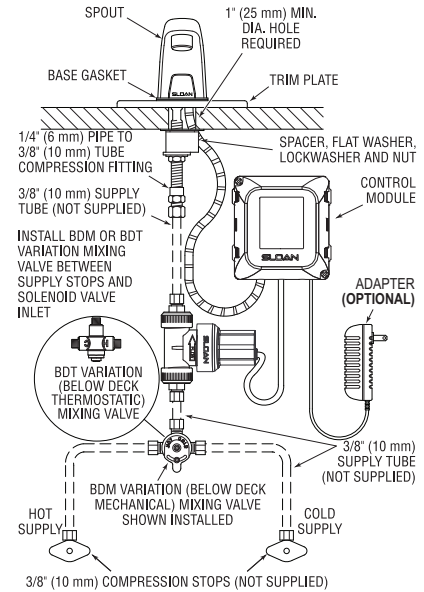
EBF-615 Faucet with ADM Variation Mixing Valve for Hot and Cold Water Supply (shown with 8\"/>



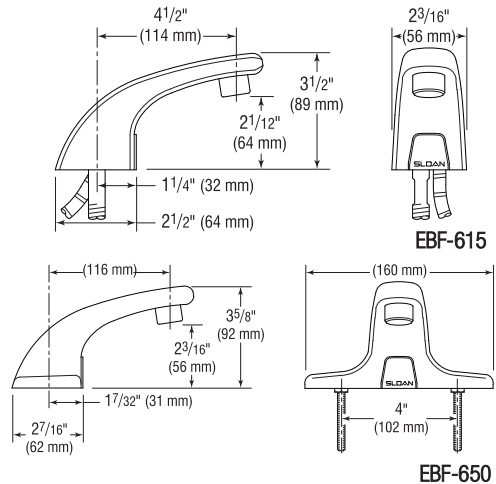
EBF-650 Faucet with BDM and BDT Variation Mixing Valves for Hot and Cold Water Supply



EBF-615 Faucet with BDM and BDT Variation Mixing Valves for Hot and Cold Water Supply (shown with 4\"/>



FAUCET SIDE VIEW

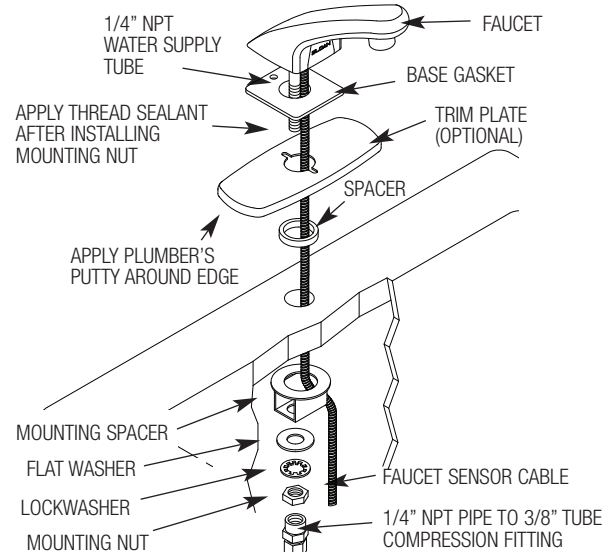


1A - Install Faucet Spout and Optional Trim Plate — EBF-615

Sloan Valve Company recommends installation of our trim plate with anti-rotation feature to prevent rotation of this single-hole pedestal-style faucet.

A Install Faucet Spout as shown. Use plumber's putty to secure optional Trim Plate, if used.

Important: After installing Mounting Nut, apply thread sealant or Teflon tape to threads of Water Supply Tube.

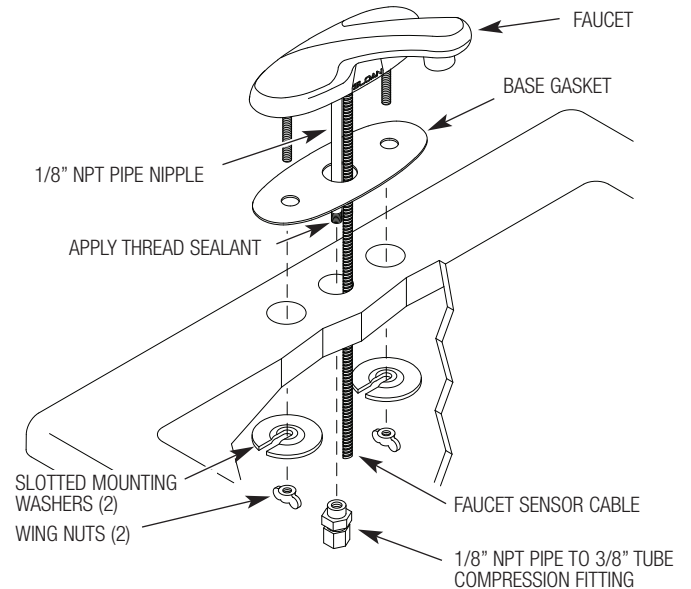


1B - Install Faucet Spout — EBF-650

Refer to the Installation Instructions included with the ETF-578-A Trim Plate for additional information about using an 8" Trim Plate with an EBF-650 faucet.

- A** Install Faucet Spout as shown.

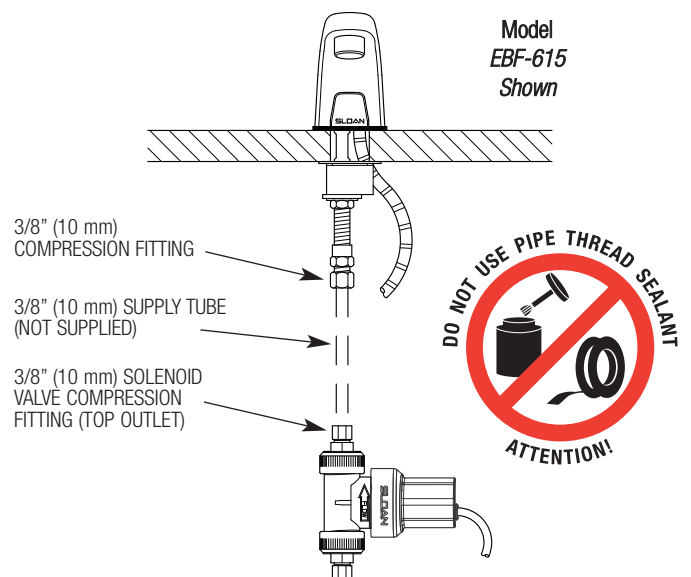
Important: Apply thread sealant or Teflon tape to threads of Water Supply Pipe Nipple.



2 - Install Solenoid Valve

Flow direction of Solenoid Valve is indicated by an arrow on Valve Body.

- A** Install 3/8 inch (10 mm) supply tube (furnished by installer) between the Compression Fittings on Spout and the top outlet of Solenoid Valve.



3 - Connect Supply Line(s) from Supply Stop(s) to Solenoid Valve Inlet

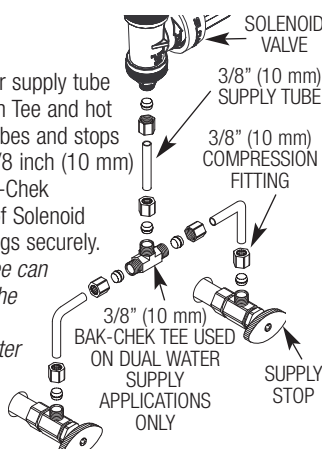
Important: Keep thread sealant out of your waterway and prevent component part damage! Do not use sealant on compression fittings. When thread sealant is used, do not apply it to the first two "starter" threads.

Important: Flush dirt, debris, and sediment from the supply line(s).

- A** Dual Line Hot and Cold Water Supply Applications

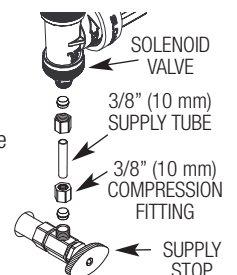
Install a 3/8 inch (10 mm) copper supply tube between Bak-Chek® Compression Tee and hot and cold supply stops. (Supply tubes and stops furnished by installer.) Install a 3/8 inch (10 mm) copper supply tube between Bak-Chek Compression Tee and inlet side of Solenoid Valve. Tighten Compression Fittings securely.

Note: Failure to install the Bak-Chek® Tee can result in a cross flow connection when the faucet is off and the supply stops are open. If pressure of the hot and cold water supply differ, hot water can migrate into the cold water supply or vice-versa. Most plumbing codes require that the Bak-Chek® be used to prevent this.



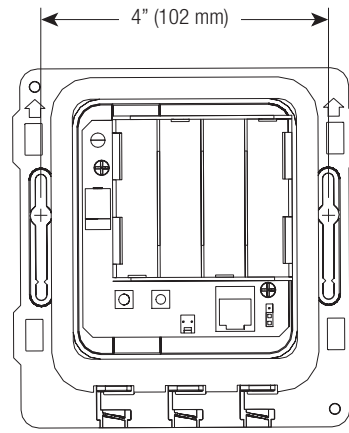
- B** Single Line Water Supply Applications

Install a 3/8 inch (10 mm) copper supply tube between the supply stop and inlet side of Solenoid Valve. (Supply tube and supply stop furnished by installer.) Tighten Compression Fittings securely.



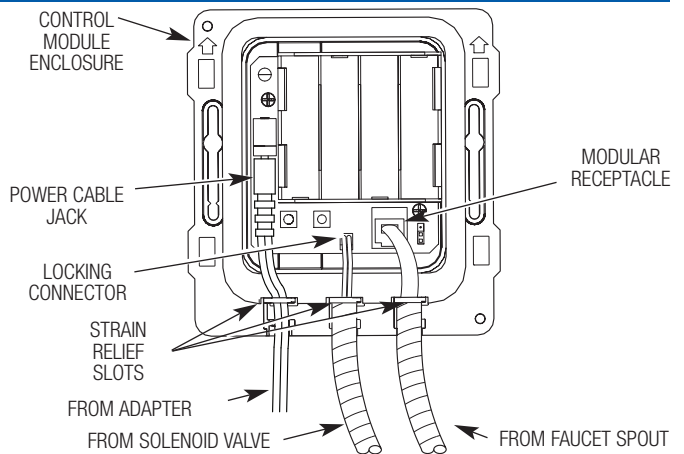
4 - Mount Control Module to Wall

- A** Install the Control Module in an appropriate location. Control Module must be installed so that all cables enter from the bottom of the unit. When installed, Cables from the Spout and Solenoid Valve to the Control Module should have some slack.
- B** Mount Control Module to wall using Mounting Screws and Plastic Anchors.



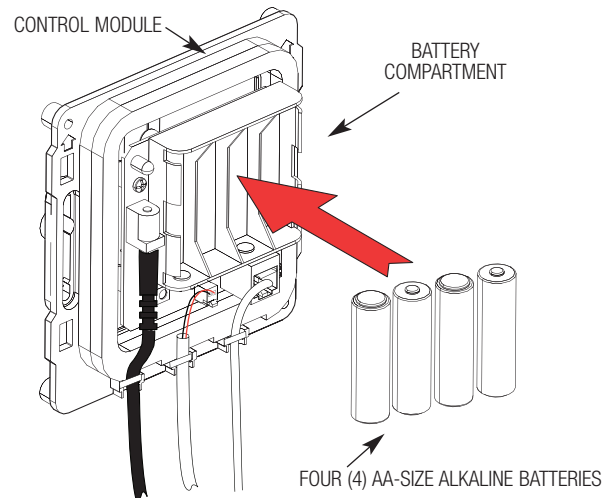
5 - Control Module Connection

- A** Route Cables from Solenoid Valve and Spout to the Control Module.
- B** Insert Locking Connector from Solenoid Valve into mating Receptacle.
- C** Insert Connector from Faucet Spout into Modular Receptacle.
- D** Insert Power Cable Jack from Adapter (optional) into Receptacle.
- E** Insert each Cable into a Strain Relief Slot.



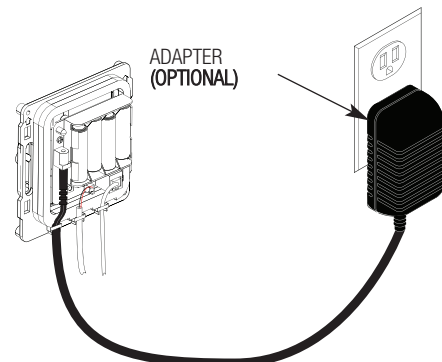
6 - Install Batteries

- A** Insert four (4) AA-size Alkaline Batteries provided as indicated by the (+) and (—) symbols inside the Battery Compartment.



7 - Plug in Adapter (Optional)

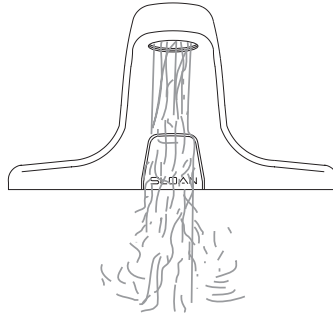
- A** Plug Adapter into Receptacle.



8 - Start-Up

- A** Activate ("dry fire") Faucet by placing hands in front of the Sensor. The Solenoid Valve should "click." Once hands are removed the Solenoid Valve should click again. If this does not occur, refer to the Troubleshooting section of this instruction manual.

Once "dry firing" segment is complete, remove spray head. Open supply stop(s) then activate Faucet by placing hands in front of the Sensor. The Solenoid Valve should "click" and water should flow from the Spout.



- B** Activate Faucet for 30 seconds by placing hands in front of the Sensor. The Solenoid Valve should "click" and water should flow from the Spout. If this does not occur, refer to the Troubleshooting section of this instruction manual.

- C** Close supply stop(s) and reinstall Spray Head in Spout using the Key provided. Reopen supply stop(s), activate Faucet and check for leaks.

9 - Range Adjustment

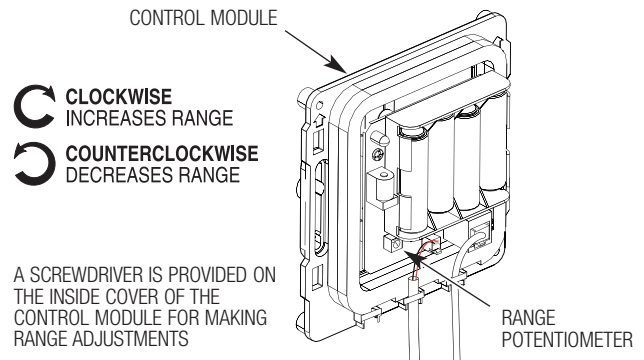
The OPTIMA Plus EBF-615 and EBF-650 Faucets are factory set to operate when hands are placed 4 to 5 inches (102 to 127 mm) from Sensor. This range should be satisfactory for most installations. If range adjustment is required, refer to the following range adjustment procedure.

- A** The Range Potentiometer is located in the Control Module.

Important: Range Potentiometer adjustment screw rotates only 3/4 of a turn; DO NOT over-rotate. Over-rotating will damage range adjustment screw.

- B** Cycle Faucet several times to assure that the Sensor will not inadvertently pick up reflection off the edge of the sink. If reflection occurs, adjust Range Potentiometer counterclockwise very slightly and again cycle Faucet.

Repeat adjustment procedure until desired range is achieved.



10 - Noise Reduction (NR) and Time Out (Mode) Jumper Settings

For jumper settings, refer to Table below or label on cover of Control Module along with the instructions in this Step.

Noise Reduction (NR) Setting

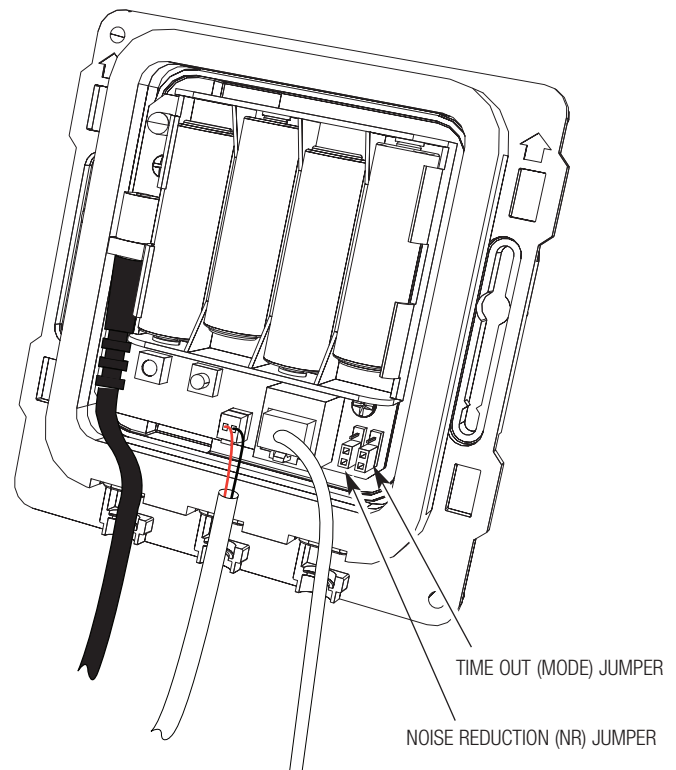
- When operating the faucet on batteries alone, set the NR jumper to bridge pins 1 and 2.
- When operating the faucet using the plug-in adapter with battery backup, bridge pins 2 and 3.

Time Out (Mode) Setting

The Faucet Time Out Setting determines the maximum time the Faucet will run upon continuous activation. This timing can be changed to meet individual application requirements.

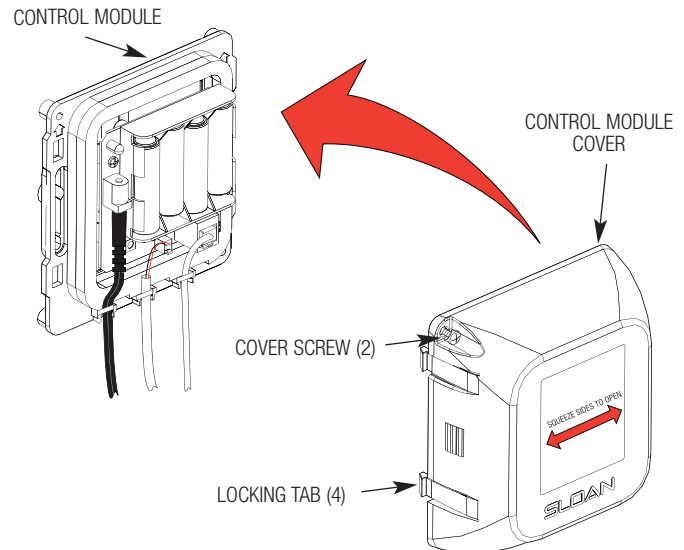
Unless otherwise specified, Faucets leave the factory set with a 30 second Time Out.

DESCRIPTION	PINS		
	1	2	3
NOISE REDUCTION (NR) SETTING			
Normal Operation (Adapter w/Battery Backup Operation)	●	●	
NR Enabled (Battery Operation Only)		●	●
TIME OUT (MODE) SETTING			
13.75 Second On Demand	●	●	
30 Second On Demand		●	●



11 - Install Cover onto Control Module

- A** Install Cover over the Control Module making sure that all four (4) locking tabs snap into place. Secure using the two (2) screws provided. Cover can be installed in only one orientation.



Operation

1. A continuous invisible beam of infrared light is emitted from the sensor located on the throat of the lavatory faucet.
2. As the user's hands enter the beam's effective range (beneath the spray head), the beam is reflected back into the sensor receiver and activates the solenoid valve. Tempered water flows from the faucet into the sink until the hands are removed from the beam or until the faucet reaches an automatic time out limit setting.
3. When hands are moved away from the sensor, the loss of reflected light initiates an electrical signal that deactivates the solenoid valve, shutting off the water flow. The circuit then automatically resets and is ready for the next user.

Care and Cleaning

DO NOT USE abrasive or chemical cleaners (including chlorine bleach) to clean faucets as they may dull the luster and attack the chrome or special decorative finishes. Use **ONLY** soap and water, then wipe dry with clean cloth or towel.

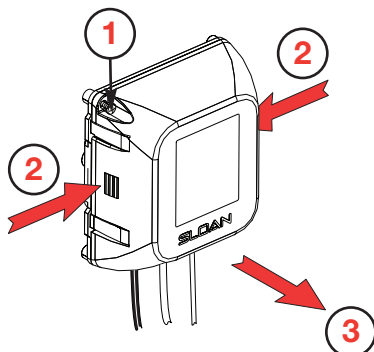
While cleaning the bathroom tile, the faucet should be protected from any splattering of cleaner. Acids and cleaning fluids will discolor or remove chrome plating.



Battery Replacement Procedure (Water does not need to be turned off)

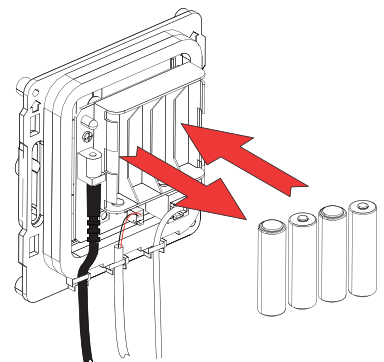
The Sloan Optima *Plus* EBF-615 and EBF-650 faucets are furnished with four (4) AA-size alkaline batteries that provide up to two (2) years of operation (8000 cycles per month). A flashing LED signal indicates that battery power will be depleted within one (1) month.

- A** Remove Cover as follows:
1. Remove the two (2) Cover Screws.
 2. Press in the middle of both sides.
 3. Pull Cover straight out from Control Module Base.



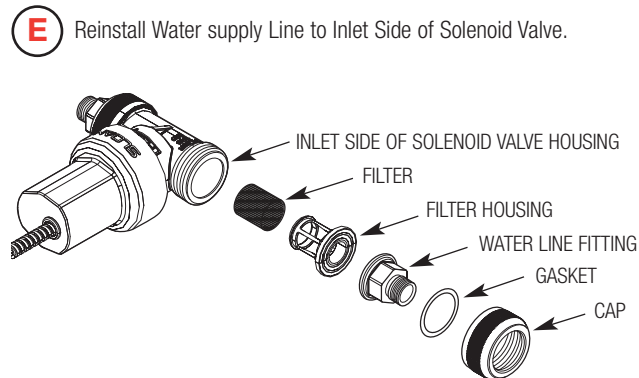
- B** Remove old batteries and insert four (4) new AA-size Alkaline Batteries as indicated by the (+) and (—) symbols inside the Battery Compartment.

- C** Reinstall Cover. Refer to Step 11.



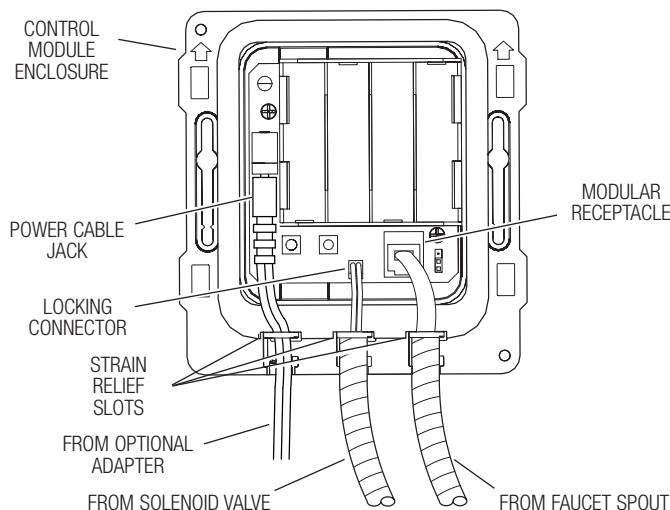
Solenoid Screen Filter Cleaning Procedure

- A** Turn off water supply at supply stop(s). Activate Faucet to relieve system pressure.
- B** Remove Water Supply Line from Inlet Side of Solenoid Valve. Remove Cap, Water Line Fitting, Gasket, Filter Housing and Filter from Solenoid Valve Housing.
- C** Slide Filter off Filter Housing. Clean Filter using fresh tap water only. If necessary, use a small brush to clean. Use caution while cleaning to prevent damage to Filter.
If any Filter components are damaged, replace as necessary. Examine the Gasket for wear or damage; replace if necessary.
- D** Reinstall Filter on Filter Housing.
Install Filter Housing, Gasket, Water Line Fitting and Cap onto Solenoid Valve Housing.
Tighten Cap securely.



Troubleshooting Guide

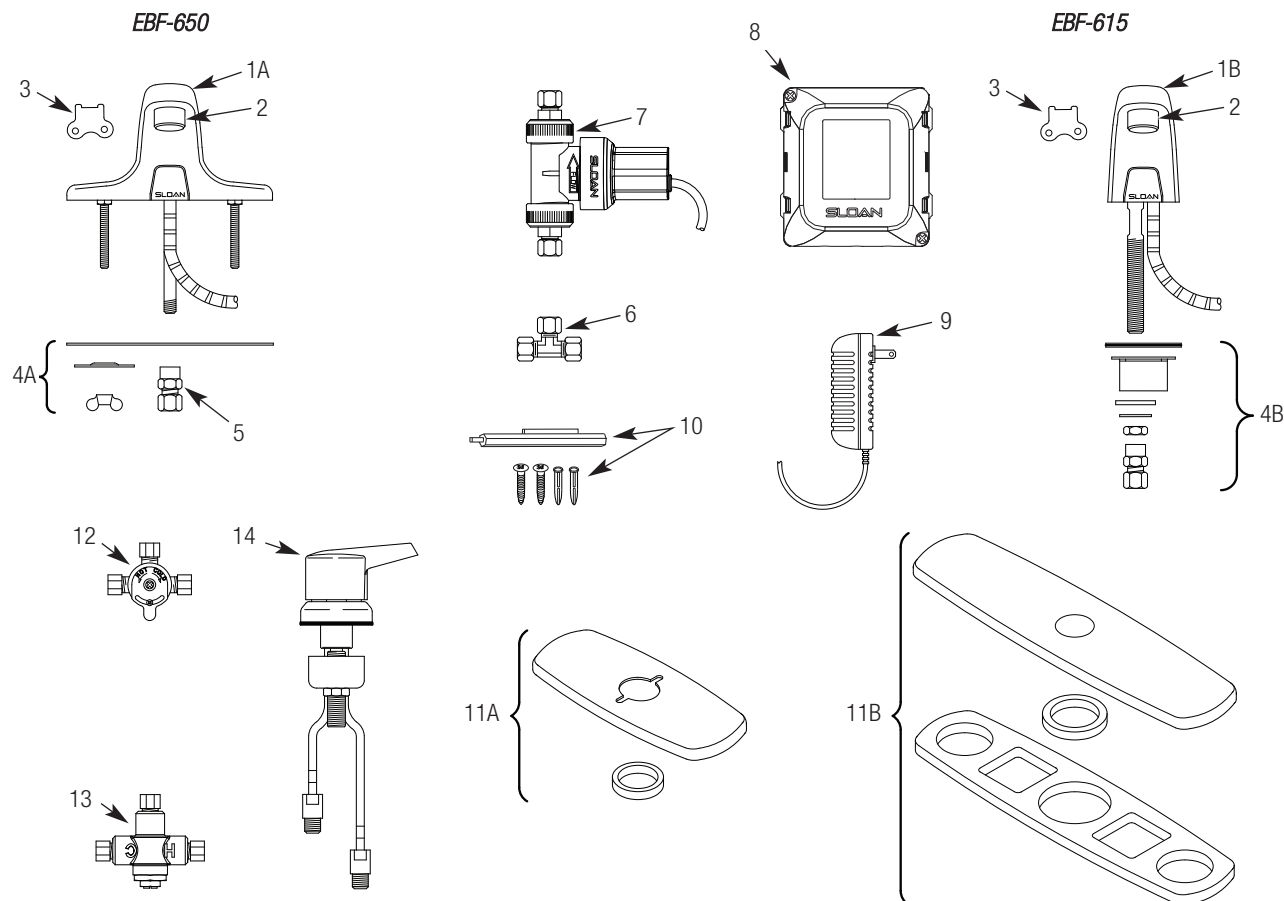
1. **PROBLEM:** Sensor LED does not function (indicator light on sensor window in faucet spout does not flash during initial 10 minute set-up mode).
CAUSE: There is no visible indicator light. Normal operation.
SOLUTION: This is a normal operating feature of the faucet.
2. **PROBLEM:** Faucet does not deliver any water when Sensor is activated.
INDICATOR: Solenoid valve produces audible "CLICK."
CAUSE: Water supply stop(s) closed.
SOLUTION: Open supply stop(s) completely.
INDICATOR: Solenoid valve DOES NOT produce an audible "CLICK."
CAUSE: Solenoid Lead is not properly connected to the Control Module.
SOLUTION: Disconnect and reconnect Solenoid Lead to the Control Module.
CAUSE: No battery or Transformer (optional) power is being supplied to Sensor.
SOLUTION: Ensure that the batteries are installed properly. Check that the orientation of each battery matches the positive (+) and negative (—) symbols shown on the bottom of the battery compartment. Reinsert the Batteries into the Control Module. Transformer (optional) is unplugged or wall receptacle has no power.
CAUSE: Sensor Cable is not properly connected to the Control Module.
SOLUTION: Disconnect and reconnect Sensor Cable to the Control Module.
CAUSE: Sensor range is set at minimum distance.
SOLUTION: Increase Sensor range. Refer to Step 9, Range Adjustment.
CAUSE: Control Module assembly is defective.
SOLUTION: Replace Control Module assembly.
3. **PROBLEM:** Faucet delivers only a slow flow or dribble when Sensor is activated.
CAUSE: Water supply stop(s) partially closed.
SOLUTION: Open supply stop(s) completely.
CAUSE: Solenoid Filter is clogged.
SOLUTION: Remove, clean and reinstall Filter. Refer to Solenoid Screen Filter Cleaning Procedure on Page 6. Replace with new Solenoid Filter Kit if necessary.
CAUSE: Aerator is clogged.
SOLUTION: Remove, clean and reinstall Aerator.
4. **PROBLEM:** Faucet does not stop delivering water or continues to drip after user is no longer detected (automatic shut-off fails even when batteries are removed).
CAUSE: Solenoid Valve has been connected backwards.
SOLUTION: Disconnect Solenoid Valve compression fittings at both the inlet and outlet positions. The water should flow from inlet through the Solenoid Valve to the outlet according to the direction of the arrow shown on the side of the Solenoid Valve. Reconnect the compression fittings in the correct orientation.
CAUSE: Solenoid Valve is dirty.
SOLUTION: Backflush by reversing water flow (opposite to the direction shown by the arrow on the side of the Solenoid Valve) through the Solenoid Valve. Reconnect the compression fittings in the correct orientation. Activate faucet.
CAUSE: Solenoid Valve Module is defective.
SOLUTION: Replace Solenoid Valve Module.
5. **PROBLEM:** The water temperature is too hot or too cold on a faucet connected to hot and cold supply lines with Bak-Chek Tee.
CAUSE: Supply stops are not adjusted properly.
SOLUTION: Adjust supply stops.
NOTE: For some systems, a Thermostatic Mixing Valve may be required.
6. **PROBLEM:** The Red LED turns on in the control module (below deck).
CAUSE: One (or more) of the batteries is "dead."
SOLUTION: To ensure proper operation, insert four (4) new AA-size Alkaline batteries. Check that the orientation of each battery matches the positive (+) and negative (—) symbols shown on the bottom of the battery compartment. Reinsert Batteries into the Control Module.



When assistance is required, please contact your local Sloan Representative or Sloan Valve Company Installation Engineering Department at:

1-888-SLOAN-14 (1-888-756-2614)

PARTS LIST



Item No.	Part No.	Description
1A	ETF-755-A	CP Faucet Assembly 4" Centerset (ETF-650)
1B	EBF-120-A	Pedestal Faucet Spout and Sensor Assembly (EBF-615)
—	ETF-749-A	Sensor Only
2	ETF-1023-A	0.5 gpm (1.9 Lpm) Spray Head with Key (male thread)
	ETF-1024-A	2.2 gpm (8.3 Lpm) Aerator Spray Head with Key (male thread)
	F-174	CP Spray Head 0.5 gpm Laminar Flow Spray Head (male thread)
3	ETF-435	Replacement Key Only for ETF-1023-A 0.5 gpm (1.9 Lpm) Spray Head and ETF-1024-A 2.2 gpm (8.3 Lpm) Aerator Spray Head (NOT required for F-175-L 2.2 gpm/8.3 Lpm Laminar Flow Spray Head)
4A	ETF-546-A	Faucet Mounting Kit for EBF-650 includes Base Gasket, two (2) Slotted Mounting Washers, two (2) Wing Nuts and ETF-547 Compression Fitting Connector
4B	EBF-123-A	Faucet Mounting Kit for EBF-615 includes Base Gasket, Spacer, Washer, 9/16" Lockwasher, 1/4" NPSM Hex Nut and ETF-547 Compression Fitting Connector
5	ETF-547	1/8" NPT Pipe to 3/8" Tube Compression Fitting Connector (female)
6	ETF-617-A	3/8" Bak-Chek® Tee Compression Fitting
7	ETF-740-A	6 VDC Solenoid Assembly
8	ETF-735-A	Control Module
—	ETF-736	Control Module Replacement Gasket (two required)

Item No.	Part No.	Description
9	SFP-6	110 VAC/6 VDC Plug-in Adapter (optional)
10	ETF-443-A	Hardwired Mounting Kit (optional)
—	EBF-113	Compression Fitting Kit (optional) includes:
	ETF-209	2 compression nuts
	ETF-208	2 ferrules
	ETF-91	1 plastic screwdriver

OPTIONAL TRIM PLATES

11A	ETF-607-A	4" (102 mm) Centerset Single-hole Trim Plate Kit for EBF-615 Faucet (Faucet only)
11B	ETF-608-A	8" (204 mm) Centerset Single-hole Trim Plate Kit for EBF-615 Faucet (Faucet only)

OPTIONAL MIXING VALVES

12	MIX-60-A	Below Deck Mechanical Water Mixing Valve (BDM Variation)
13	MIX-135-A	Below Deck Thermostatic Water Mixing Valve (BDT Variation)
14	MIX-110-AA	Optimix® Deck Mounted Water Mixing Valve (only available for EBF-615 faucets)

For additional information about Sloan Mixing Valves or Trim Plates, consult our Installation Instructions and Maintenance Guides.

SLOAN

SLOAN VALVE COMPANY • 10500 SEYMOUR AVENUE • FRANKLIN PARK, IL 60131
 Phone: 1-800-9-VALVE-9 or 1-847-671-4300 • Fax: 1-800-447-8329 or 1-847-671-4380
www.sloanvalve.com

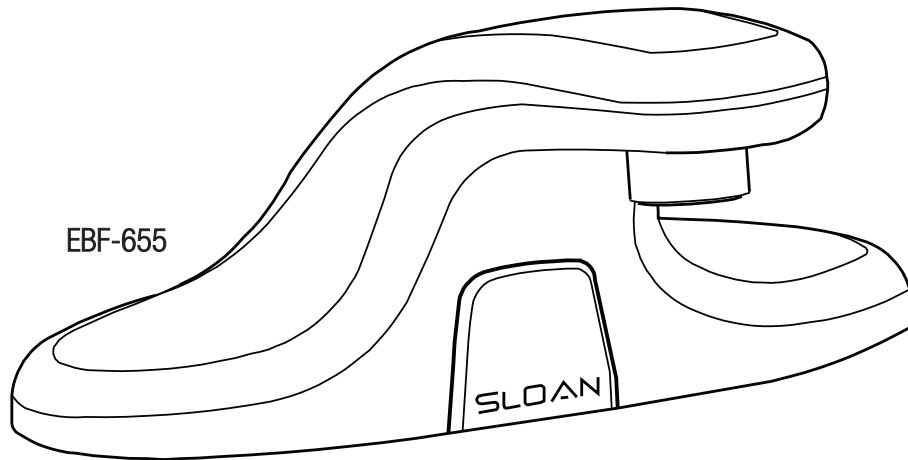
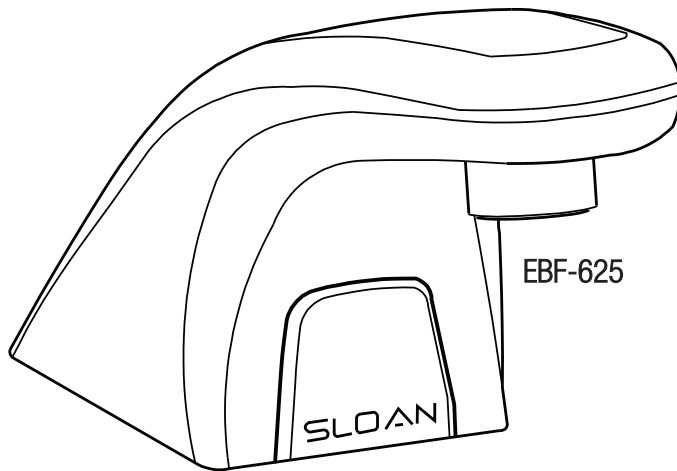
INSTALLATION INSTRUCTIONS FOR EBF-625/EBF-655 SENSOR ACTIVATED FAUCETS

MODELS

EBF-625

EBF-655

Battery Powered,
Sensor Activated
Lavatory Faucets



Installation of the Sloan Optima Plus EBF-625 or EBF-655 Battery Powered, Sensor Activated Faucet makes wash-up totally "hands free" providing the ultimate in sanitary protection and automatic operation. The Optima Plus faucet uses infrared technology to sense the user's presence and turn on a water supply that has been pre-mixed to the desired water temperature. When the user's hands are removed from the invisible beam of light, the water supply automatically turns off. In addition, the faucet is powered by four (4) "C" batteries which eliminates the need to run any electrical lines to the system.

The Sloan EBF-625 or EBF-655 battery powered, sensor activated faucet comes complete with an integral faucet and sensor assembly,

control module, alkaline batteries, and all mounting hardware. Bak-checks and a grid strainer are also available as optional equipment. The installer should supply 3/8" copper supply tube or flexible hose connections.

The following instructions serve as a guide when installing the Sloan EBF-625 or EBF-655 faucet. As always, good safety practices and care when installing your new faucet.

If further assistance is required, contact your nearest Sloan Representative office or the Sloan Installation Engineering Department at 1-888-SLOAN-14.

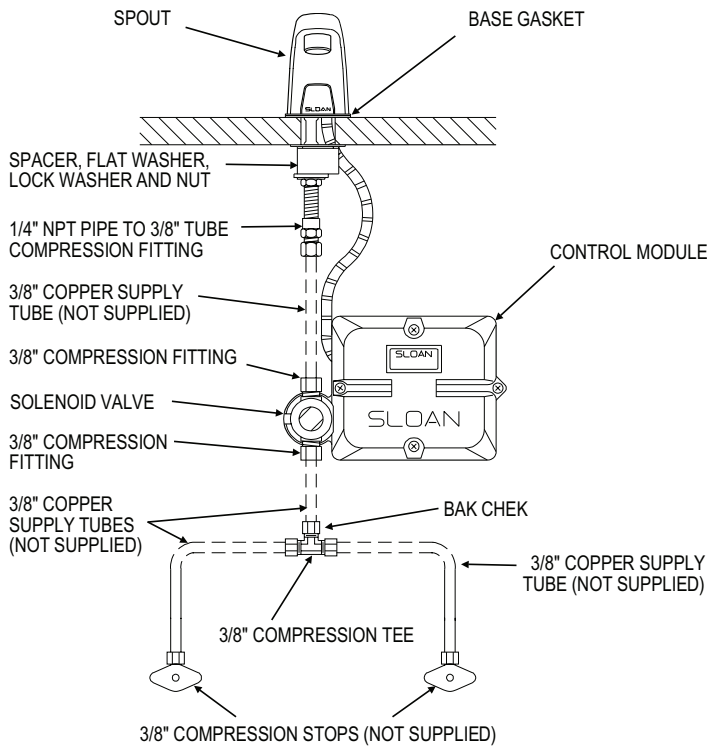
LIMITED WARRANTY

Sloan Valve Company warrants its EBF-625 and EBF-655 faucets to be made of first class materials, free from defects of material or workmanship under normal use and to perform the service for which they are intended in a thoroughly reliable and efficient manner when properly installed and serviced, for a period of three (3) years (one (1) year for special finishes) from date of purchase. During this period, Sloan Valve Company will, at its option, repair or replace any part or parts which prove to be thus defective if returned to Sloan Valve Company, at customer's cost, and this shall be the sole remedy available under this warranty. No claims will be allowed for labor, transportation or other incidental costs. This warranty extends only to persons or organizations who purchase Sloan Valve Company's products directly from Sloan Valve Company for purpose of resale. This warranty does not cover the life of batteries.

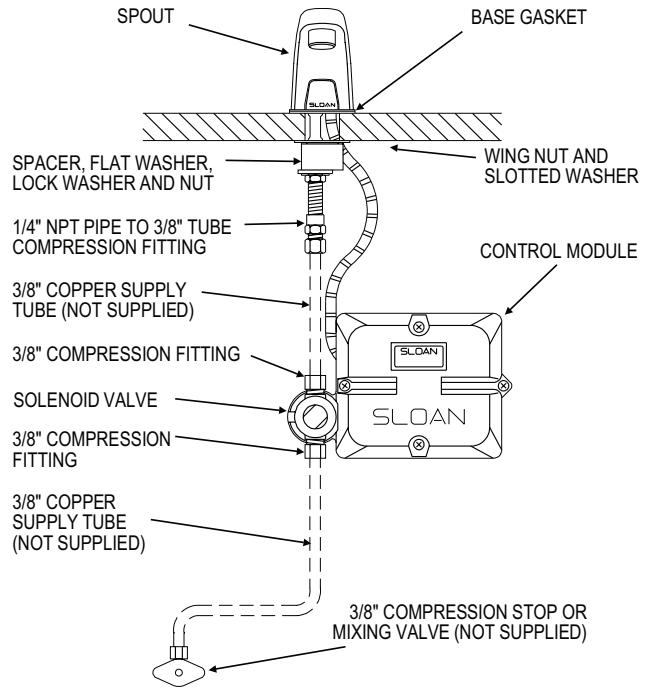
THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF. IN NO EVENT IS SLOAN VALVE COMPANY RESPONSIBLE FOR ANY CONSEQUENTIAL DAMAGES OF ANY MEASURE WHATSOEVER.

ROUGH-INS

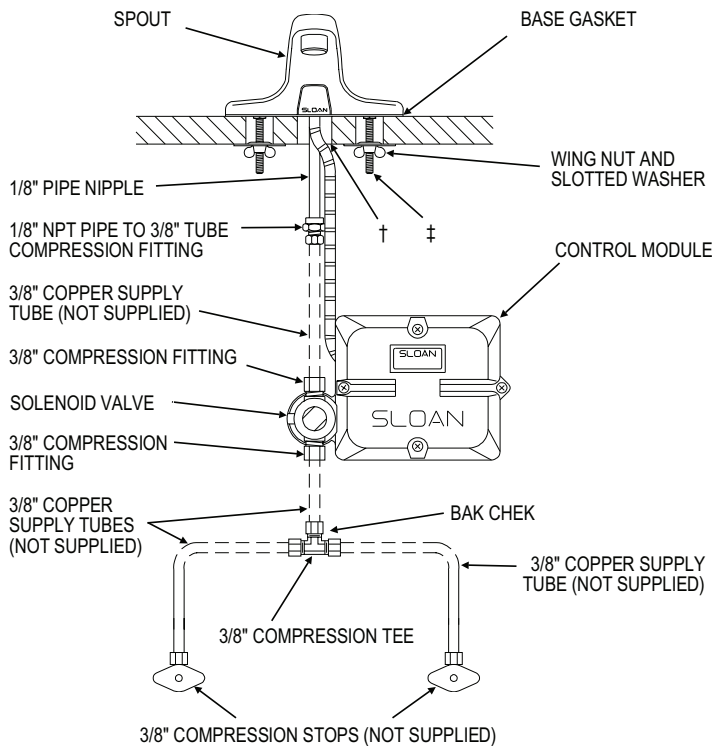
EBF-625 FAUCET WITH DUAL LINE WATER SUPPLY



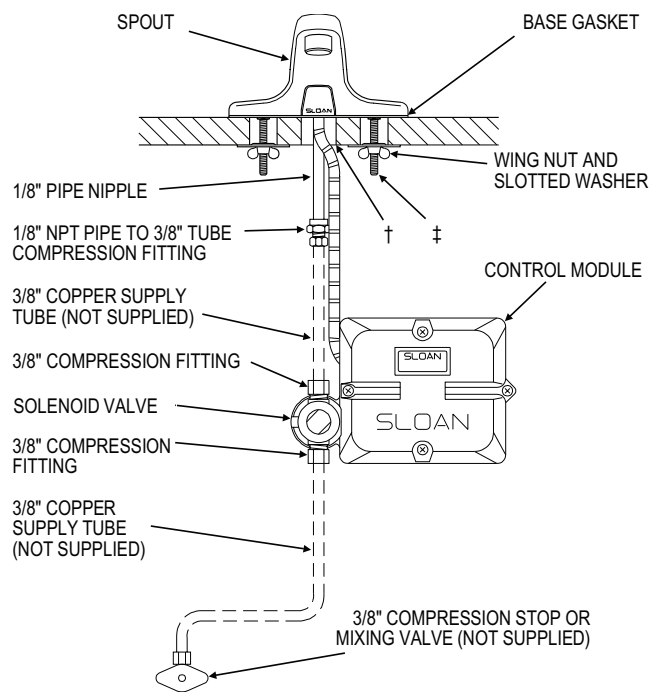
EBF-625 FAUCET WITH SINGLE LINE WATER SUPPLY



EBF-655 FAUCET WITH DUAL LINE WATER SUPPLY



EBF-655 FAUCET WITH SINGLE LINE WATER SUPPLY

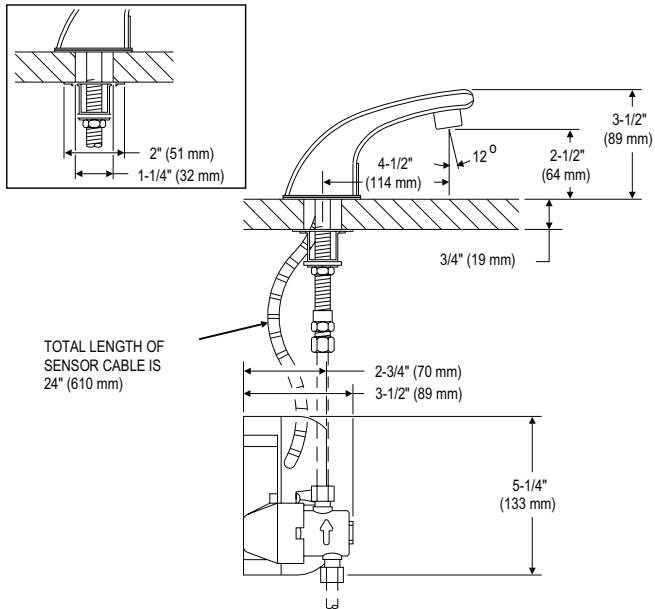


† 1" (25 mm) minimum diameter hole required to mount faucet shank on deck.

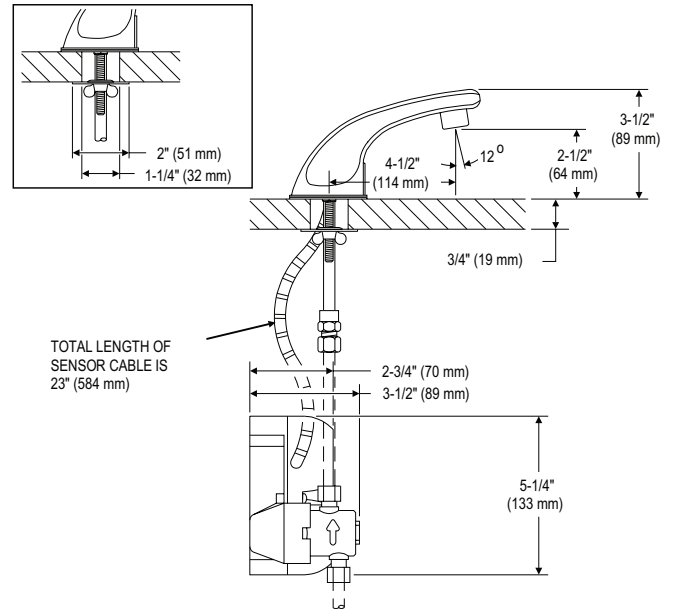
‡ 3/8" (10 mm) minimum diameter clearance for mounting studs.

ROUGH-INS (CONTINUED)

EBF-625 FAUCET WITH BOTH DUAL AND SINGLE LINE WATER SUPPLIES



EBF-655 FAUCET WITH BOTH DUAL AND SINGLE LINE WATER SUPPLIES



PRIOR TO INSTALLATION

Prior to installing the Sloan EBF-625 or EBF-655 faucet, install the items listed below.

- Lavatory/Sink
- Drain Line
- Hot Water and Cold Water OR Tempered Water Supply Lines

IMPORTANT:

- **ALL PLUMBING IS TO BE INSTALLED IN ACCORDANCE WITH APPLICABLE CODES AND REGULATIONS**
- **FLUSH ALL WATER LINES PRIOR TO MAKING CONNECTIONS**

MIXING VALVE

When installation includes one of Sloan's Mixing Valve, these instructions AND those included with the mixing valve **MUST** be followed.

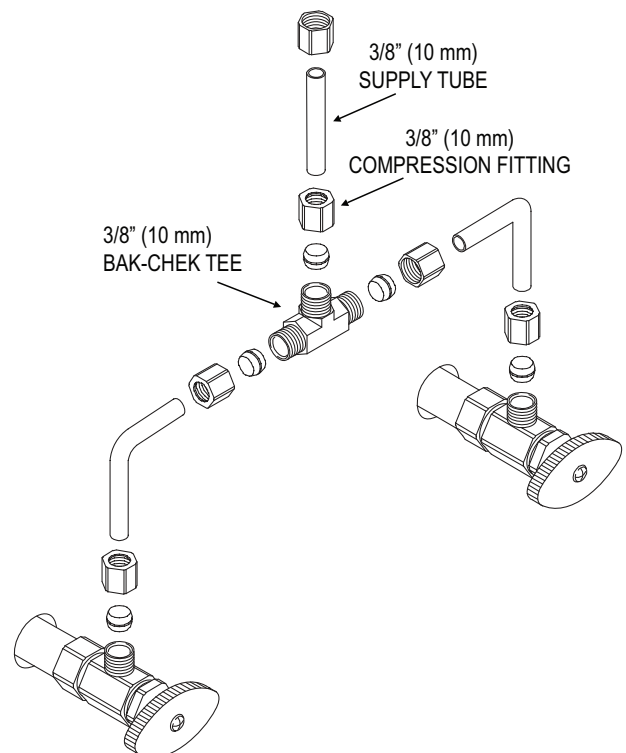
The Sloan EBF-625 and EBF-655 battery powered sensor activated faucets can be supplied with two Bak-Cheks. When connecting the faucet to a hot and cold water supply, two Bak-Cheks are required. Water temperature can be controlled by adjusting the supply stops. When connecting the faucet to a single line water supply or a pre-tempered water supply, a Bak-Chek is not required.

1 - INSTALL BAK-CHEK TEE (OPTIONAL)

- A** The Sloan Bak-Chek is designed for installation on a 3/8" supply stop. If an existing stop is used, the stop may require replacement or additional fittings not supplied by Sloan for connection of the Bak-Chek to the hot and cold water supply lines. Supply stops should be furnished by the installer.

- B** After flushing the water supply lines through the stops, use a compression nut and compression sleeve to connect inlet end of Bak-Chek to the Supply Stop.

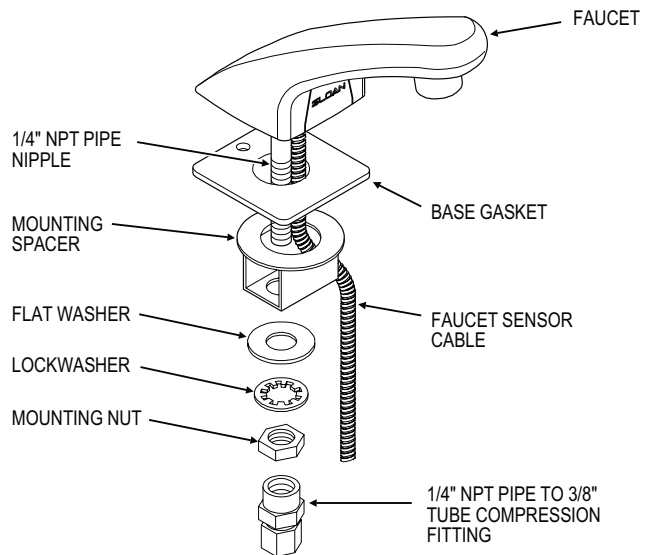
NOTE: Failure to install the Bak-Chek can result in a cross flow connection when the faucet is in the off position and the supply stops are open. If the pressures of the hot water supply and the cold water supply are different, hot water can migrate into the cold water supply or cold water can migrate into the hot water supply. Most plumbing codes require that the Bak-Chek be used to prevent this occurrence.



2A - INSTALL EBF-625 FAUCET

NOTE: Sloan Valve Company recommends that this faucet is installed with our trim plate. Our trim plate includes an anti-rotation feature to prevent rotary motion of this single-hole pedestal-style faucet.

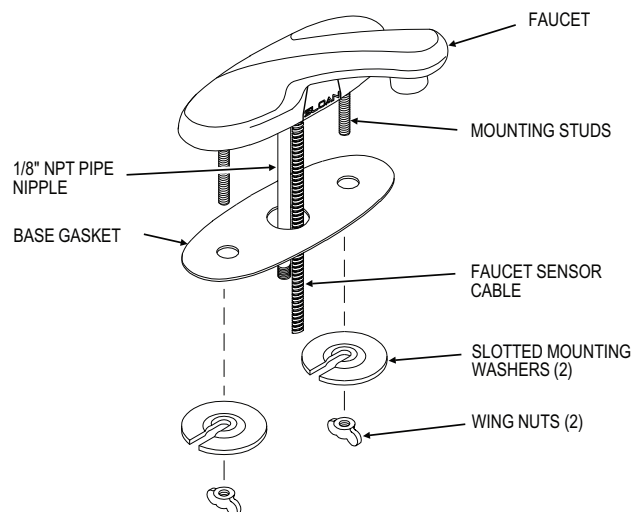
- A** Slide faucet base gasket over faucet shank and sensor cable.
- B** Install optional trim plate next followed by the trim plate gasket. Holding the faucet base gasket and optional trim plate assembly in place, insert sensor cable and faucet shank through the 1" (25 mm) center hole in deck lavatory. Use plumber's putty to secure optional trim plate.
- C** Thread sensor cable through side of mounting spacer, and then secure faucet to deck or lavatory using the mounting washer, lock washer and nut. Apply thread sealant or Teflon tape to threads at end of faucet shank.
- D** Install 3/8" compression fitting on end of faucet shank.



2B - INSTALL EBF-655 FAUCET

NOTE: Refer to the Installation Instructions included with the ETF-578-A trim plate for additional information about using an 8" trim plate with an EBF-655 faucet.

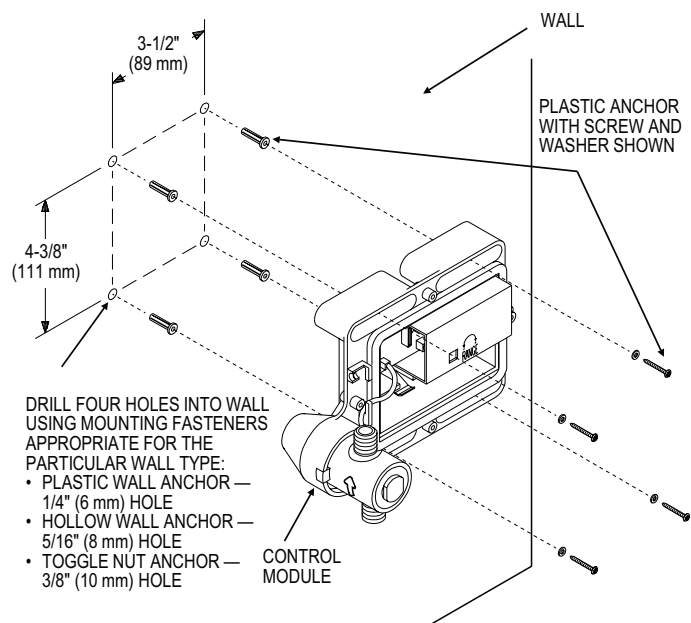
- A** Slide faucet base gasket onto faucet.
- B** Insert faucet sensor cable, pipe nipple, and mounting studs through the 4" (102 mm) spread deck holes. Secure faucet to deck using slotted mounting washers and wing nuts supplied.



3 - MOUNT CONTROL MODULE TO WALL

IMPORTANT: DO NOT install control module upside down. The control module may be oriented so that it faces sideways (vertically); however, optimum performance is obtained when the control module is horizontal with the Sloan logo on the cover facing up.

- A** Install the control module in an appropriate location. All four (4) cover screws must be accessible from the chosen mounting position. After installation, the cable from spout to control module should have some slack.
- B** Remove control module cover from control module base. Use the control module base as a template to mark locations on wall for mounting fasteners. Determine the appropriate mounting fastener for the particular wall type (three different fastener types are included; see parts list). Drill four (4) appropriately sized holes.
 - For plastic wall anchor – 1/4" (6 mm) holes
 - For hollow wall anchor – 5/16" (8 mm) holes
 - For toggle nut anchor – 3/8" (10 mm) holes
- C** Attach Control Module base to wall using appropriate fastener.

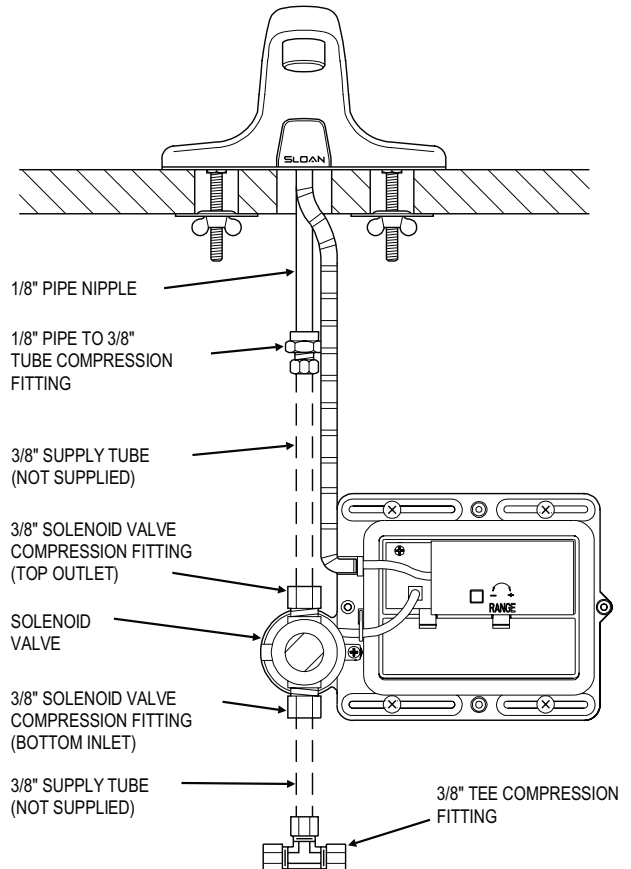
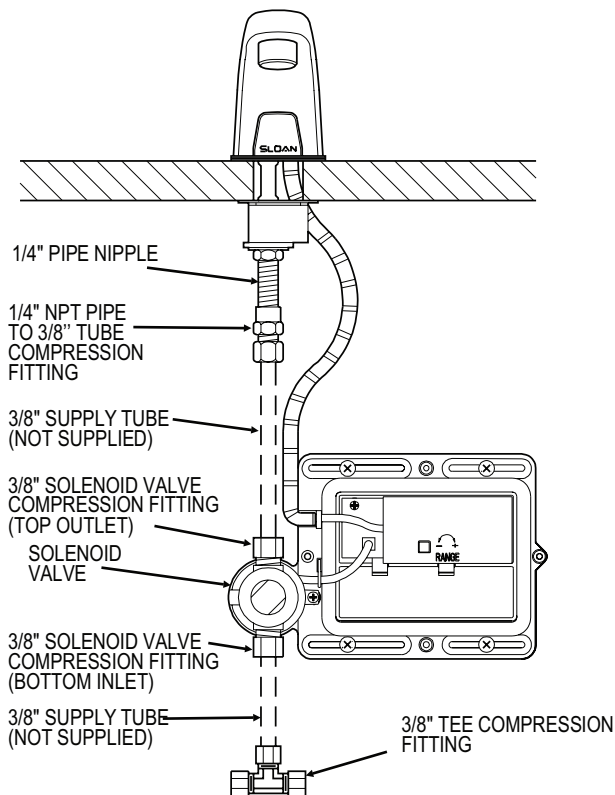


4 - CONNECT SENSOR CABLE TO CONTROL MODULE

- A** Remove circuit board cover from control module.
- B** Route sensor cable from spout to the control module, usually located under the faucet with sufficient slack in sensor cable. Insert locking connector from faucet spout into mating receptacle on connector board of control module.
- C** Insert the sensor cable into the strain relief slot in the control module.
- D** Install circuit board cover into control module.

5 - CONNECT SUPPLY LINE FROM SOLENOID VALVE OUTLET TO FAUCET

- A** **FOR MODEL EBF-625** – Install the 1/4" (6.4 mm) pipe to the 3/8" (9.5 mm) tube compression fitting on spout's pipe nipple.
FOR MODEL EBF-655 – Install the 1/8" (3.2 mm) pipe to the 3/8" (9.5 mm) tube compression fitting on spout's pipe nipple.
- B** **FOR MODELS EBF-625 AND EBF-655** – Connect 3/8" (9.5 mm) outside diameter (O.D.) of supply tube (furnished by installer) between the compression fitting on the spout's pipe nipple and the top outlet compression fitting on the solenoid valve.



NOTE: An arrow on the body of the solenoid valve indicates the water flow direction.

IMPORTANT: Keep thread sealant out of your waterway and prevent component part damage! **DO NOT USE** sealant on compression fittings. When thread sealant is used, **DO NOT APPLY** it to the first two "starter" threads.

6 - CONNECT SUPPLY LINE(S) FROM SUPPLY STOP TO SOLENOID VALVE INLET

NOTE: Supply stops should be furnished by installer.

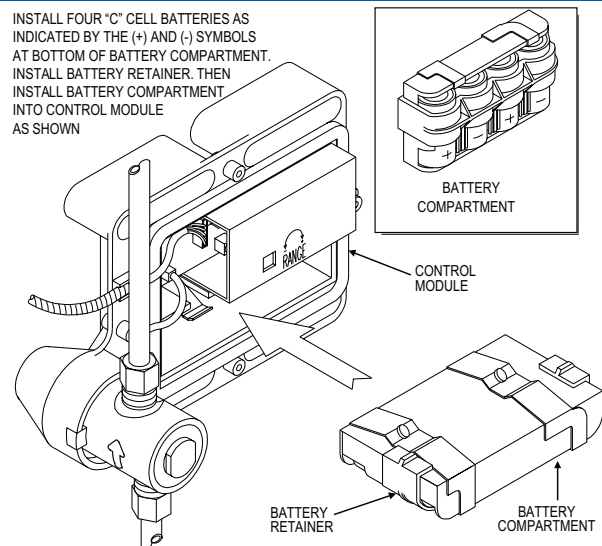
- A** Flush dirt, debris, and sediment from the supply line(s).
- B** **FOR DUAL LINE HOT AND COLD WATER SUPPLY APPLICATIONS** – When connecting the faucet to a hot and cold water supply, a Bak-Chek is required as described in Step 1. If Bak-Chek is not installed at this time, install them now referring back to Step 1 for instructions. Install a 3/8" copper supply tube between Bak-Chek Compression Tee Fitting supplied. Install a 3/8" copper supply tube between compression tee fitting and the bottom inlet compression fitting of solenoid valve.
- C** **FOR SINGLE LINE WATER SUPPLY APPLICATIONS** – When connecting the faucet to a single line water supply or a pre-tempered water supply, no Bak-Chek is required. Install a 3/8" copper supply tube between the supply stop and the bottom inlet compression fitting of solenoid valve.

7 - INSTALL BATTERIES

Remove the battery compartment from the control module by gently pulling straight out. Spread the ends of the battery retainer and remove it from the battery compartment. Insert the four (4) "C" cell alkaline batteries provided as indicated by the (+) and (-) symbols inside the battery compartment. Spread the ends of the battery retainer and slide it over the battery compartment until locked into place.

NOTE: Battery retainer must be installed, shown right. If installed upside-down, it will not install into the control module. Reinsert the battery compartment into the control module. See image, shown right.

INSTALL FOUR "C" CELL BATTERIES AS INDICATED BY THE (+) AND (-) SYMBOLS AT BOTTOM OF BATTERY COMPARTMENT. INSTALL BATTERY RETAINER. THEN INSTALL BATTERY COMPARTMENT INTO CONTROL MODULE AS SHOWN



8 - START-UP

A Open supply stops. Remove spray head, then activate faucet for 30 seconds by placing hands in front of the sensor. The solenoid valve should "click," sensor LED indicator should blink and water should flow from the spout. If this does not occur, refer to the Troubleshooting section.

NOTE: The sensor LED indicator should blink when faucet is activated for the first 10 minutes after start-up.

B Close supply stop(s) and install spray head in spout using the key provided. Reopen supply stop(s), activate faucet and check for leaks.

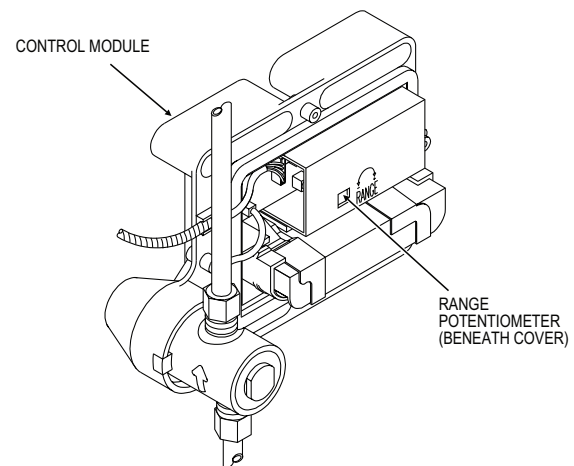
9 - RANGE ADJUSTMENT

A The OPTIMA Plus EBF-625 and EBF-655 faucets are factory set to operate when hands are placed 4-5" (102-127 mm) from sensor. This range should be satisfactory for most installations.

B If range adjustment is required, use a small Phillips screwdriver.

C **ADJUST RANGE** – The range potentiometer is located in the control module. Cycle faucet several times to assure that the sensor range does not inadvertently pick up reflection off the edge of the sink. If reflection occurs, slightly adjust range potentiometer counterclockwise and again cycle faucet. Repeat adjustment procedure until desired range is achieved.

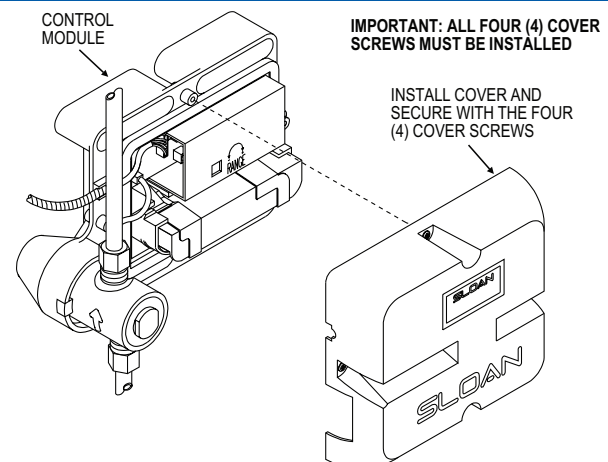
IMPORTANT: Range potentiometer adjustment screw rotates only 3/4 of a turn; DO NOT over-rotate.



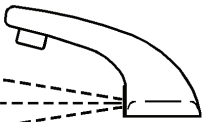
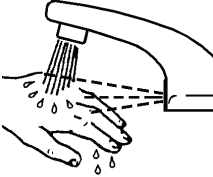
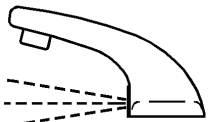
10 - INSTALL COVER TO CONTROL MODULE

Place cover over the control module and use the four (4) screws provided to attach it. Cover can be installed in only one orientation.

IMPORTANT: Install ALL four (4) cover screws for proper installation.



OPERATION

1. A continuous invisible beam of infrared light is emitted from the sensor located on the throat of the lavatory faucet. 
2. As the user's hands enter the beam's effective range (beneath the spray head), the beam is reflected back into the sensor receiver and activates the solenoid valve. Tempered water flows from the faucet into the sink until the hands are removed from the beam or until the faucet reaches an automatic time out limit setting. 
3. When hands are moved away from the sensor, the loss of reflected light initiates an electrical signal that deactivates the solenoid valve, shutting off the water flow. The circuit then automatically resets and is ready for the next user. 

MAINTENANCE

CARE AND CLEANING

DO NOT USE abrasive or chemical cleaners (including chlorine bleach) to clean faucets that may dull the luster and attack the chrome or special decorative finishes. Use **ONLY** soap and water, then wipe dry with clean cloth or towel. Protect the faucet from any splattering of cleaner when cleaning bathroom tile. Acids and cleaning fluids will discolor or remove chrome plating.

BATTERY REPLACEMENT

The Sloan Optima Plus EBF-625 and EBF-655 battery powered, sensor activated lavatory faucets are furnished with four (4) "C" cell alkaline batteries that provide up to two (2) years of operation (8000 cycles per month). A flashing LED signal indicates that battery power will be depleted within one (1) month. Replace batteries with four (4) new "C" cell alkaline batteries.

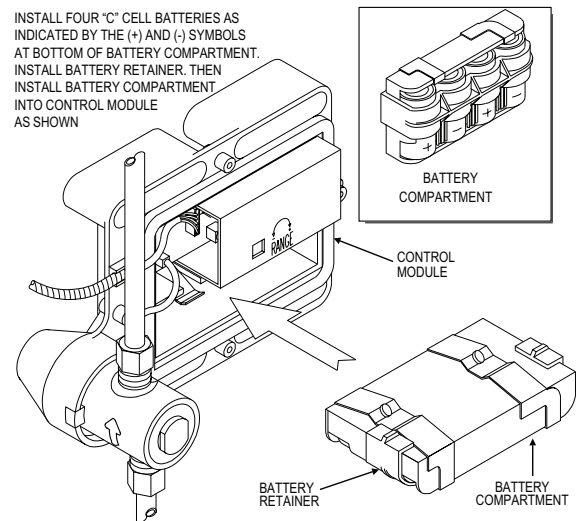
Remove the Cover of the Control Module by unscrewing the four (4) cover screws located at the center of each side.

Remove the battery compartment from the control module by gently pulling straight out with a firm grip. Spread the ends of the battery reainer and remove it from the battery compartment. Remove the old batteries and insert four(4) fresh "C" cell alkaline batteries into the battery compartment. Spread the ends of the battery reainer and slide it over the battery compartment until locked into place.

NOTE: Battery Retainer **MUST** be installed as shown. If installed upside-down, it will not install into the Control Module. Reinsert the Battery Compartment into the Control Module as shown.

Place cover over the Control Module and use the four (4) screws provided to attach it. Cover can be installed in only one orientation.

IMPORTANT: Install ALL four (4) cover screws for proper installation.



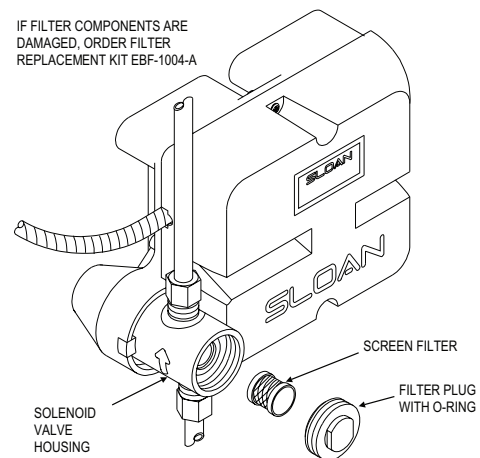
CLEANING SCREEN FILTER

Before cleaning the screen filter, turn off water supply at the supply stop(s). Activate the faucet to relieve any pressure in the system. Unscrew the filter plug and remove it from the solenoid valve housing. Carefully pull the screen filter with attached rubber seals out from the solenoid valve housing.

Clean the screen filter using fresh tap water only. If necessary, use a small brush to clean. Use caution while cleaning to prevent damage to the solenoid screen filter. If any filter components are damaged, order Filter Replacement Kit EBF-1004-A.

Carefully replace the screen filter into the groove of the solenoid valve housing. Examine the filter plug o-ring for wear or damage; replace if necessary. If necessary, lubricate the filter plug o-ring with water to keep it in place in the groove of the filter plug. Screw the filter plug into the solenoid valve housing.

Turn on the water supply at the supply stop(s). Activate the faucet to purge any air from the system lines. Check for leaks and repair as necessary.



TROUBLESHOOTING GUIDE

1. **Faucet does not stop delivering water or continues to drip after user is no longer detected (automatic shut-off fails even when batteries are removed).**

Solenoid valve has been connected backward.

Disassemble solenoid valve compression fittings at both the inlet and outlet positions. The water should flow from inlet through the solenoid valve to the outlet according to the direction of the arrow shown on the side of the solenoid valve. Reconnect the compression fittings in the correct orientation.

Solenoid valve is dirty.

Backflush by reversing water flow (opposite to the direction shown by the arrow on the side of the solenoid valve) through the solenoid valve. Reconnect the compression fittings in the correct orientation. Activate faucet.

Solenoid valve module is defective.

Replace EBF-1011-A Solenoid Valve Module.

TROUBLESHOOTING GUIDE (CONTINUED)

2. Sensor troubleshooting LED does not function (red indicator light does not flash during set-up procedure)

No battery power is being supplied to sensor.

Ensure that the batteries are installed properly. Check that the orientation of each battery matches the positive (+) and negative (-) symbols shown on the bottom of the battery compartment. Reinsert the battery compartment into the control module.

Insufficient battery power is being supplied to sensor.

One (or more) of the batteries is "dead." To ensure proper operation, insert four (4) new "C" sized alkaline batteries. Check that the orientation of each battery matches the positive (+) and negative (-) symbols shown on the bottom of the battery compartment. Reinsert the battery compartment into the control module.

Sensor Cable is not properly inserted.

Disconnect and reconnect Sensor Cable to the Control Module.

Sensor Range is set at minimum distance.

Increase Sensor Range. Use a small screwdriver to turn the potentiometer screw (white screw in blue base) clockwise.

Control Module assembly is defective.

Replace EBF-60-A Control Module assembly.

3. The water temperature is too hot or too cold on a faucet connected to hot and cold supply lines with Bak-Chek.

Supply stops are not adjusted properly.

Adjust Supply Stops.

NOTE: A thermostatic mixing valve may be required on some systems.

4. Faucet does not deliver any water when Sensor is activated.

Solenoid valve produces audible "CLICK." Water supply valve is closed.

Open the water supply.

Solenoid valve DOES NOT produce an audible "CLICK".

Disconnect and reconnect Solenoid lead to the Control module, if solenoid lead is not properly connected to the Control Module. Batteries are not installed properly. Check that the orientation of each battery matches the positive (+) and negative (-) symbols shown on the bottom of the battery compartment. Reinsert the Battery Compartment into the Control Module. The troubleshooting LED should flash RED when a user is detected.

5. Faucet delivers only a slow flow or dribble when Sensor is activated.

Water supply valve is partially closed.

Completely open the Supply Stop.

Solenoid Filter is clogged.

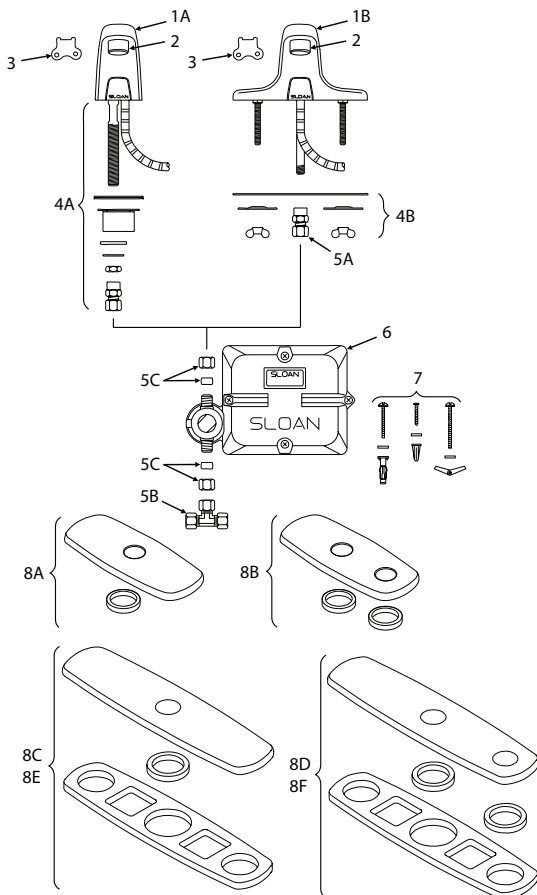
Remove, clean, and reinsert. Replace EBF-1004-A Solenoid Filter Kit, if necessary.

Aerator or Spray Head is clogged.

Remove, clean, and reinsert.

If further assistance is required, please contact the
Sloan Valve Company Installation Engineering Department
at 1-888-SLOAN-14.

PARTS LIST



ITEM NO.	PART NO.	DESCRIPTION
1A	EBF-120-A	Pedestal Faucet Spout and Sensor Assembly (EBF-625)
1B	EBF-81-A	Faucet Spout and Sensor Assembly (EBF-655)
2	ETF-1023-A	0.5 gpm (1.9 Lpm) Spray Head with Key
	ETF-1024-A	2.2 gpm (8.3 Lpm) Aerator Spray Head with Key
	F-175-L	2.2 gpm (8.3 Lpm) Laminar Flow Spray Head
3	ETF-435	Replacement Key ONLY for ETF-1023-A and ETF-1024-A
4A	EBF-123-A	Faucet Mounting Kit for EBF-625
4B	ETF-546-A	Faucet Mounting Kit for EBF-655
5A	ETF-547	1/8" NPT Pipe to 3/8" Tube Compression Fitting Connection
5B	ETF-617	3/8" Bak-Chek Tee Compression Fitting
5C	EBF-113-A	Single Solenoid Supply Kit
6	EBF-60-A	Control Module Assembly
7	EBF-79-A	Mounting Hardware Kit for Control Module Assembly
8A	ETF-103-A	4" (102 mm) Centerset Trim Plate for EBF-625
8B	MIX-101-A	4" (102 mm) Centerset Trim Plate for EBF-625 with Optional Mixing Valve
8C	ETF-105-A	8" (204 mm) Centerset Trim Plate for EBF-625
8D	MIX-106-A	8" (204 mm) Centerset Trim Plate for EBF-625
8E	ETF-576-A	8" (204 mm) Centerset Trim Plate for EBF-655
8F	ETF-577-A	8" (204 mm) Centerset Trim Plate for EBF-655 with Optional Mixing Valve
-	EBF-80-A	Sensor Replacement Kit
-	EBF-1011-A	Solenoid Replacement Kit
-	EBF-1004-A	Solenoid Filter Replacement Kit (includes Filter Screen and O-Ring)

NOTE: The information contained in this document is subject to change without notice.

SLOAN VALVE COMPANY • 10500 SEYMOUR AVENUE • FRANKLIN PARK, IL 60131

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Code No: 9108237 – Rev. 3 (12/10)